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ABSTRACT

Designed as a forum for the exchange of information among members of the National Council for Research and Planning, these two journal issues offer 10 articles concerning community college research and planning. The first issue presents: (1) "Just Testing," by Arthur M. Cohen; (2) "Enrollment Patterns of Adult Learning in a Community College," by Carolyn Hawkins, David Prendergarst, and Nancy McNerney; (3) "Institutional Research and End User Computing: The Development of an Information Center," by Michael Stevenson and R. Dan Walleri; (4) "Studying Employer Needs in a Time of Change," by Robbie Lee Needham; and (5) "AACJC Report: National Indicators and Enrollment Figures," by Rosemary Wholers. In addition, the journal includes an ERIC report on community college transfer students. The second issue contains "Needs Assessment and Institutional Vitality" by Adelbert Purga; "Planning for Change: Assessing Internal and External Environmental Factors," by Janis Cox Coffey; "Assessing the Professional Development Needs of Community College Managers: A Participatory Approach," by Ken Kempner and Mary K. Kinnick; "Multivariate Analyses of Urban Community College Student Performance on the ACT (American College Testing Program) College Outcomes Measures Program Test," by Gloria Kitabchi; and an ERIC report on evaluating college assessment and placement programs. (RO)

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VOLUME IV, NUMBERS 1 & 2

JC 860 239

PURPOSE

The *Community College Journal for Research and Planning* provides a forum for the exchange of information among members of the association and among professional colleagues in the field of research and planning. The *Journal* is multi-purpose and diverse in its articles and information; however, it is unified in its purpose to be of service to professionals working in the field of Community College research, management and planning.

The *Journal* is designed to provide an outlet for research and discussion on issues important to community college researchers and planners. It also serves as an information source for all elements of higher education interested in institutional management. The *Journal* meets a need to communicate the findings and achievement of research and planning professionals concerned with issues of concern to community colleges.

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INSTRUCTIONS TO AUTHORS

All manuscripts will be reviewed and considered for publication. Manuscripts should be submitted in duplicate, double-spaced on 8 × 11 white bond. There are no restrictions on the size of the manuscript or the topic reviewed except that articles serve the needs of community college research as stated in the purpose. Style of the *Journal* will conform to the guidelines found in the Publications manual of the American Psychological Association. Correspondence and manuscripts should be submitted to:

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Community College Journal for Research and Planning

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THE PRESIDENT'S FORUM:
Just Testing

Arthur M. Cohen, President NCRP, 1983-84

How much do students know? That question, although basic to the community college enterprise, is among those questions least often asked. We do know the percentage of people from various ethnic and neighborhood groups that the colleges are serving, the success ratio for graduates who find jobs, the faculty workload criteria; reports answering those questions appear in the literature with amazing frequency. Is it because the nature of the community that is served, the paid employment that people gain, and the deployment of staff are more important than what students are learning?

If the community college is a teaching institution, and if, by definition, teaching has some association with learning, then studies of what students know should be prominent in the literature. However, even those studies of student knowledge that do appear deal with relative knowledge: Which student knows more than another? Which student shall enter a certain type of program?

Some reports are concerned with a fixed standard of student knowledge, typically for use in considering students who fall above or below a cut point on knowledge of computational skills, reading, or English usage. Most institutions now track students into remedial or special programs if the students fail to achieve a certain level on an entrance examination.

The prominence of testing for student placement in occupational programs is evidenced by the number of documents arriving at the ERIC Clearinghouse that concern the validity of the tests and their reliability in predicting students' success. Some colleges have become quite vigorous in those activities, for example, Sacramento City College, which operates an Assessment Center that administers examinations in English, English as a Second Language, and several other areas. Many of that Center's reports consider the success of various testing projects in predicting student achievement. (ED 230, 247; ED 230, 248; ED 230, 258; ED 231, 494.)

The question of student competency is of more than passing interest. Questions have been raised by educational institutions, state legislatures, and national commissions. These voices decrying the inadequate preparation of people entering college have led to a flurry of activities. Not only have remedial courses been reinstated, colleges have begun working with secondary schools to assist the preparation of college-bound students. As one example, the University of California, the California State University, and the California Community Colleges issued a joint statement on competencies in English and mathematics expected of entering freshmen (ED 222, 235). In Florida, the legislature got involved and mandated that students leaving the sophomore year

pass a College Level Academic Skills Test before proceeding to the junior year in Florida's state universities (ED 238, 481).

What is the role of the institutional research officer in this new climate? Since English and Mathematics are the two subjects most often tested, the faculty in those disciplines are usually associated with the testing activities, at least to the extent of selecting or creating the instruments. They may also feed back information about student success. But the testing process must be administered by a college group that has continuity, facilities, and expertise in managing large-scale test administration that cuts across academic departments. That is where the research and planning office enters, especially in institutions where there is no assessment center or testing bureau. This role fits in with the overall activities of research and planning officers because the test data are useful in predicting enrollments, transfer rates, retention, and curriculum planning. And test results can be merged with other data sets for maximum effect.

The recent interest in testing and placing students has made student assessment once more acceptable. But except for a few isolated classes or departments, students are not tested in content areas other than English and Mathematics. For one reason, English usage and computational abilities are considered basic to all collegiate studies; other disciplinary areas are often considered too specialized. However, a broader reason may be that instructors in the sciences, social sciences, and humanities rarely agree on concepts underlying their disciplines, hence find it impossible to construct tests that measure student abilities. (There is an old education adage, "If you can't define it, you can't measure it.") Nonetheless, at the level of general education, the introductory courses in sciences, social sciences, and the humanities account for a sizeable majority of the offerings in those areas; it would seem that some testing could be done if only to gain knowledge of the entering students' abilities and prior experiences in those disciplines. Testing in those areas could also be useful in validating grade marks assigned, understanding the students' curricular experiences, relating academic preparation in community colleges with the types of courses and concepts presented in secondary schools and universities, and getting an estimate of students' gained abilities from time of entrance to the community college until time of graduation.

In 1982, the Center for the study of Community Colleges constructed a General Academic Assessment, an instrument designed to measure student knowledge in the liberal arts (ED 231, 447). The instrument was field tested in five colleges in California and Kansas and administered to approximately 8,000 students in the community college systems in Chicago, Los Angeles, Miami, and St. Louis during the 1983-84 academic year. Items for the instrument were provided by the National Assessment of Educational Progress, the Educational Testing Service, and by several of the colleges in which the test was administered. The student samples were drawn from class sections carrying transfer credit so that a cross-section of all students enrolled in transfer courses could be drawn.

The results of the test administration shed light on many of the issues often debated by community college staff members and analysts. The older students tended to do better than the younger ones, suggesting that much of general education is attained through sources other than collegiate activities. However, there was a direct correlation between the number of units completed and the scores on the instrument; the more courses a person had taken, the more they knew. Students taking classes for their personal interest scored

highest, and those planning entry into a specific occupation the lowest. Native English speakers scored higher in all categories except mathematics (Riley, 1984a; Riley, 1984b).

None of the findings from the Center's administration of the General Academic Assessment were particularly surprising except the one indicating that the students themselves were the best predictors of their scores on the instrument. The students were asked, "Compared with other students in this college, how would you rate your ability to do the following?" And for each category covering mathematics, English usage, social science, humanities, and science, the students who rated themselves "poor" in comparison with their fellows did poorly while those who rated themselves as "excellent" scored the highest. This simple way of getting an estimate of student ability calls into question some of the extensive student achievement batteries that are administered for the purpose of course placement.

Is a General Academic Assessment useful in planning? It would seem that an institutional research or planning officer could make much use of data indicating what cohorts of students know. The key to the process is not in the items chosen for the instrument; a planning or research officer would experience frustration of a type never before known if he or she tried to get the faculty in an academic area to agree on a few items that measure knowledge in their field. And that is understandable - which few items cover the scope of economics? Which cover the scope of psychology? However, an instrument can be built so that it is valid for the purposes of assessing the broad general knowledge that is in the possession of the student body as a whole.

Testing student abilities offers a way of gaining a data set on student knowledge in general education areas. As such, it presents the opportunity to add to the repertoire of information available to research and planning officers. Enhancing student knowledge is the essential purpose of the community college. Why continue to ignore measuring that dimension?

References

Academic Senate for California Community Colleges, Sacramento. "Statements on Preparation in English and Mathematics: Competencies Expected of Entering Freshmen and Remedial and Baccalaureate Level Course Work," 1982. (ED 222, 235)

Center for the Study of Community Colleges, Los Angeles, California. "The Community College General Academic Assessment," 1983. (ED 231, 447)

Haase, M. and Caffrey, P., "Semi-Annual Report on Assessment Procedures: Spring, Summer, and Fall 1982," Sacramento City College, 1983a. (ED 230, 247)

Haase, M. and Caffrey, P., "Assessment and Placement at Sacramento City College," Sacramento City College, 1983b. (ED 230, 258)

Haase, M. and Caffrey, P., "Assessment Procedures, Fall 1982 and Spring 1983. Semi-Annual Research Report, Part I," Sacramento City College, 1983c. (ED 231, 494)

Haase, M. and Roberts, L., "Semi-Annual Report on Assessment Procedures: Fall 1981 and Spring 1982 (and) Supplemental Assessment Center Research Report: Fall 1981 and Spring 1982," Sacramento City College, 1982. (ED 230, 248)

McCabe, R.H., "A Status Report on the Comprehensive Educational Reform of Miami-Dade Community College," Miami-Dade Community College, 1983. (ED 238, 481)

Riley, M., "The Community College General Academic Assessment: Los Angeles District, 1983," Los Angeles: Center for the Study of Community Colleges, 1984a.

Riley, M., "The Community College General Academic Assessment: Miami-Dade Community College District, 1983," Los Angeles: Center for the Study of Community Colleges, 1984b.

Enrollment Patterns of Adult Learning in a Community College

Carolyn Hawkins, David Prendergarst and Nancy McNerney

Introduction

One of the greatest areas of change projected in community colleges' during the next decade is the composition of enrolled students. Changes are occurring not only in the type and characteristics of students attending the colleges, but also in their patterns of attendance.

The emergence of a continuous lifelong adult learner population mandates that educators in community colleges focus on reenrollment patterns if they are to insure education to these learners. Different format of educational response may be needed in order to meet their needs. Fall enrollments during 1979 and 1980 of all Illinois public community colleges consisted of students over the age of 21.

If adult learners have differing needs, assessing their enrollment patterns, specifically the relationship between these patterns and curriculum, sex, age, ethnic origin, time of attendance, and number of credit hours carried each term, is significant because it may provide a data base to support projections, planning, and implementation necessary to realize the goals of education for adult learners.

Most research studies completed since the early 1970s profile student populations rather than analyze potential relationships between variables (California State Coordinating Council for Higher Education, 1973; Hunter, 1981; Lucas, 1981; Gold, 1982; Maryland State Board for Community Colleges, 1982). Variables most frequently studied are age, sex, ethnic origin, program of enrollment, time of attendance, and number of credit hours. Demographic variables are habitually used for planning and projection by decision makers at both the local, state, and national level.

In accordance with the national trend, adult enrollments have been consistently increasing in all community colleges. Researchers have documented these trends in their various colleges (Alfred, 1974; Knoell, 1976; Siegel, 1978; Gold, 1982). A study by Knoell (1976) provided revealing information about the age of students in California's public community colleges. This study showed that enrollment of part-time students increased three times as much as the enrollment of full-time students between 1969 and 1974, with the result that 50 percent of enrollees were over age 21. As of fall 1982, the median age at Illinois' 52 community colleges was 25.8. Students 25 and over accounted for 196,845 of Illinois community colleges' 375,594 students whose ages were known (Illinois Community College Board, 1983, p. 5).

In contrast to using student profiles to document age, other researchers have considered age as a variable influencing persistence (Conklin, 1975; Bacon, 1976; Knoell, 1976). Knoell found that students who (a) had graduated from high school the year they entered the community college, or (b) transferred to a community college at age 18, were much more likely to continue for more than one term at that institution and to earn degrees and certificates than students who did not enroll until they were past 21 years of age (1976, p. 24).

A study of attrition at Allegany Community College showed that while full-time students dominated fall enrollment by two to one, part-time students accounted for more than half of the non-returners (1976).

When age is studied as a variable influencing persistence in community college students, data support the conclusion that older students are less likely to persist than younger students. However, graduation is less frequently the goal of adult students.

Purpose

The purpose of this study was to increase understanding of enrollment patterns of the adult learner population in the community college. More specifically, it was designed to explore the implications of enrollment patterns as reflected in data commonly collected in all community colleges. The study examined enrollment patterns for six consecutive full terms at Triton College in River Grove, Illinois. Although the study is restricted to one community college, it is expected that some of the results will prove useful beyond this college.

The sample population consisted of adult student enrollees in fall 1979 who were tracked through spring 1982. Summer term enrollments were not examined as part of this study. Adult learners were divided into three main groups: baccalaureate, occupational, and continuing education curricula enrollees.

More specifically, this descriptive ex post facto study answered the following research questions:

1. Does the curriculum (baccalaureate, occupational, or continuing education) of adult learners have a relationship to enrollment patterns?
2. Does the sex of adult learners have a relationship to enrollment patterns?
3. Does the age of adult learners have a relationship to enrollment patterns?
4. Does the ethnic origin (white or non-white) of adult learners have a relationship to enrollment patterns?
5. Is the time of attendance (day or evening) of adult learners related to enrollment patterns?
6. Does the number of credit hours carried per term have a relationship to enrollment patterns?

Dependent Variables for the study were the following enrollment patterns:

1. Persistence within a term (did they finish the term?);
2. Persistence across terms (did they reenroll?);
3. Frequency of enrollment (how often did they enroll?); and
4. Intermittency of enrollment (to what extent did they enroll consecutively?).

The Independent Variables were:

1. Age;
2. Sex;
3. Ethnic origin;
4. Number of credit hours carried;
5. Time of attendance (day or evening); and
6. Curriculum (baccalaureate, occupational, or continuing education).

Methodology

All data for this study were collected using a data base inquiry language on Triton College's Burroughs B6800 mainframe computer. Each combination of dependent variable and independent variable was then analyzed using the Statistical Package for the Social Sciences (SPSS).

Each research question was tested, using t-tests when two groups, and analysis of variance (ANOVA) when more than two groups were compared. A regression approach was tested with all the variables in the model.

The procedural development of this study involved the following activities:

1. The study population was selected from students at Triton College aged 25 and older enrolled in the fall of 1979. All adult learners enrolled were included in the sample if their ages were known. This resulted in a total sample of 11,022 students and a 99.7 percent sampling rate for the baccalaureate area, a rate of 97.8 percent for occupational adult learners, and a 53.9 percent rate for continuing education.
2. A data file was built for all students in the sample, utilizing data base inquiry and extract software. This file captured the study data for each student in the sample for each of six terms from fall 1979 through spring 1982.
3. Statistical tests were then applied to assess each of the research questions of the study. There were both metric and non-metric variables in the study, dictating different tests (correlation, t-test, chi-square) for different research questions. A significance level of .05 was established for all tests.
4. In addition, additional tests (regression and discriminant analyses) were performed to assess the combined effect of the independent variables while controlling for intercorrelations among independent variables.

Results

Research Question 1: *Does the age of adult learners have a relationship to enrollment patterns?*

The Pearson Correlation revealed a statistically significant relationship between age and within-term persistence ($r = 0.04$, $p < 0.01$) and between age and frequency of enrollment ($r = 0.06$, $p < 0.001$). The relationship between age and across-term persistence (t-value = 1.65, $p < 0.10$) and between age and intermittency of enrollment ($r = 0.01$, $p < 0.40$) was not significant.

The relationship between age and all enrollment pattern variables was positive; that is, older adults showed significantly higher within-term persistence and frequency of enrollment than younger adults. The across-term persistence of older adults was also slightly higher, though not at a statistically significant level. There was a very slight positive relationship between intermittency of enrollment and age.

The significant correlations for age with within-term persistence and frequency of enrollment ($r = 0.04$ and $r = 0.06$, respectively) seemed too small to be "really" significant. However, the key factor here was the sample size which, at 6,000 to 11,000 cases (depending on the test), was so large as to allow even very small correlations to attain statistical significance. Tables 1 through 4 display the results of the statistical tests for the relationship between age and enrollment patterns.

Table 1.
Age and Within-Term Persistence

N	r	Significance
8,713	0.04	$p < 0.01$

Table 2.
Age and Across-Term Persistence

Group	N	Mean	Standard Deviation	t-value
Persisters	4,608	39.92	13.806	1.65
Non-Persisters	6,414	39.49	12.523	

$df = 11,020$ $p < 0.10$

Note: The average age of across-term persisters is higher, though not significantly so, than that of those who did not persist from Fall 1979 to Spring 1980

Table 3.
Age and Frequency of Enrollment

N	r	Significance
11,022	0.06	$p < 0.001$

Table 4.
Age and Intermittency of Enrollment

N	r	Significance
6,017	0.01	$p < 0.04$

Note: A positive correlation indicates that intermittency is higher for younger adult learners.

Research Question 2: *Does the sex of adult learners have a relationship to enrollment patterns?*

The t-test revealed a statistically significant relationship between sex and intermittency of enrollment (t-value = 3.42, $p < 0.01$). The relationship between sex and within-term persistence (t-value = -1.55, $p < 0.12$), between sex and across-term persistence (chi-square = 2.27, $p < 0.13$), and between sex and frequency of enrollment (t-value = -1.40, $p < 0.16$) was not significant.

In general, there is no clear pattern of enrollment stability favoring one sex over the other, with statistically significant result being shown only for intermittency. That is, enrollment of adult females is significantly more intermittent than that of adult males. The within-term persistence (86.9 percent to 86.0 percent) and frequency of enrollment (2.03 to 1.99) are higher for females, though not significantly so. Males showed a slightly higher, non-significant, rate of across-term persistence (42.8 percent to 41.3 percent). Tables 5 through 8 contain the detailed results of significance tests for the relationship between sex and enrollment patterns.

Table 5.
Sex and Within-Term Persistence

Group	N	Mean	Standard Deviation	t-value
Males	3,363	0.860	0.278	
				-1.55
Females	5,350	0.869	0.274	

df = 8,711 $p < 0.12$

Table 6.
Sex and Across-Term Persistence

	Persisters		Non-Persisters	
	N	%	N	%
Males	1,720	42.8%	2,303	57.2%
Females	2,888	41.3%	4,111	58.7%

chi-square = 2.27 df = 1 $p < 0.13$

Table 7.
Sex and Frequency of Enrollment

Group	N	Mean	Standard Deviation	t-value
Males	4,023	1.99	1.145	
				-1.40
Females	6,999	2.03	1.148	

df = 11,020 $p < 0.16$

Table 8.
Sex and Intermittency of Enrollment

Group	N	Mean	Standard Deviation	t-value
Males	2,160	0.879	0.197	
				3.42
Females	3,857	0.861	0.207	

df = 6,015 $p < 0.01$

Note: A higher mean for intermittency indicates less intermittent (i.e., more "consecutive") enrollment.

Research Question 3: *Does the ethnic origin (white or non-white) have a relationship to enrollment patterns?*

The relationship between ethnic origin and enrollment patterns was significant for three of the four dependent variables. The direction of the differences was not consistently one way or another, however. White adult learners were more persistent within-term (t-value = 3.48, $p < 0.01$), but non-white adult learners were more persistent across-term (chi-square = 7.25, $p < 0.01$), enrolled more frequently (t-value = 2.80, $p < 0.01$), and were less intermittent in their enrollment (t-value = -0.37, not significant). The full results of the significance tests for ethnic origin are included in tables 9 through 12.

Table 9.
Ethnic Origin and Within-Term Persistence

Group	N	Mean	Standard Deviation	t-value
Whites	7,532	0.870	0.276	
				3.48
Non-Whites	1,181	0.840	0.276	

df = 8,711 $p < 0.01$

Table 10.
Ethnic Origin and Across-Term Persistence

	Persisters		Non-Persisters	
	N	%	N	%
Whites	4,055	41.4%	5,750	58.6%
Non-Whites	553	45.4%	664	54.6%

chi-square = 7.25 df = 1 $p < 0.01$

Table 11.
Ethnic Origin and Frequency of Enrollment

Group	N	Mean	Standard Deviation	t-value
Whites	9,805	2.00	1.141	-2.80
Non-Whites	1,217	2.10	1.195	

df = 11,020 $p < 0.01$

Table 12.
Ethnic Origin and Intermittency of Enrollment

Group	N	Mean	Standard Deviation	t-value
Whites	5,309	0.867	0.204	-0.37
Non-Whites	708	0.870	0.203	

df = 6,015 $p < 0.71$

Research Question 4: *Does the number of credit hours carried per term have a relationship to enrollment patterns?*

The relationship between average credit load and enrollment patterns was significant for all four dependent variables. In all four cases, the relationship was positive. That is, adult learners with higher average credit loads showed greater within-term persistence ($r = 0.05$, $p < 0.001$), greater across-term persistence (t-value = 26.01, $p < 0.001$), greater frequency of enrollment ($r = 0.24$, $p < 0.001$), and less intermittency of enrollment ($r = 0.22$, $p < 0.001$). The full results are included in tables 13 through 16.

Table 13.
Average Credit Load and Within-Term Persistence

N	r	Significance
8,713	0.05	$p < 0.001$

Table 14.
Average Credit Load and Across-Term Persistence

Group	N	Mean	Standard Deviation	t-value
Persisters	3,861	4.76	3.731	26.05
Non-Persisters	4,852	2.98	2.608	

$df = 8,711$ $p < 0.001$

Note: The average credit load of across-term persisters is significantly higher than that of those who did not persist from Fall 1979 to Spring 1980.

Table 15.
Average Credit Load and Frequency of Enrollment

N	r	Significance
8,713	0.24	$p < 0.001$

Table 16.
Average Credit Load and Intermittency of Enrollment

N	r	Significance
4,945	0.22	$p < 0.001$

Note: A positive correlation indicates that intermittency is higher for those with lower average credit loads.

Research Question 5: *Is the time of attendance (day or evening) of adult learners related to enrollment patterns?*

There was a statistically significant relationship between time of attendance and across-term persistence (chi-square = 223.64, $p < 0.001$), between time of attendance and frequency of enrollment (t-value = 13.82, $p < 0.001$), and between time of attendance and intermittency of enrollment (t-value = 7.53, $p < 0.001$). The relationship between time of attendance and within-term persistence (t-value = 1.11, $p < 0.27$) was not significant.

Adult learners who attended primarily during the day had more stable enrollment patterns for all four dependent variables. Daytime attenders had significantly higher across-term persistence (59.1 percent to 38.9 percent) and frequency of enrollment (2.38 to 1.95), and significantly lower intermittency of enrollment (0.91 to 0.86, with a higher figure indicating less intermittency). The within-term persistence of daytime adult learners was also higher (87.4 percent to 86.4 percent), though not significantly so. Tables 17 through 20 contain the results of the actual significance tests.

Table 17.
Time of Attendance and Within-Term Persistence

Group	N	Mean	Standard Deviation	t-value
Day	1,279	0.874	0.251	1.11
Evening	7,434	0.864	0.280	

df = 8,711 $p < 0.27$

Table 18.
Time of Attendance and Across-Term Persistence

	Persisters		Non-Persisters	
	N	%	N	%
Day	929	59.1%	644	40.9%
Evening	3,679	38.9%	5,770	61.1%

chi-square = 223.64 df = 1 $p < 0.001$

Table 19.
Time of Attendance and Frequency of Enrollment

Group	N	Mean	Standard Deviation	t-value
Day	1,573	2.38	1.205	
				13.82
Evening	9,449	1.95	1.126	

df = 11,020 $p < 0.001$

Table 20.
Time of Attendance and Intermittency of Enrollment

Group	N	Mean	Standard Deviation	t-value
Day	1,082	0.909	0.175	
				7.53
Evening	4,935	0.858	0.208	

df = 6,015 $p < 0.001$

Research Question 6: *Does the curriculum (baccalaureate, occupational, or continuing education) of adult learners have a relationship to enrollment patterns?*

The relationship between curriculum and enrollment patterns was significant for all four dependent variables. Because this analysis involved three subgroups, analysis of variance tests were run for three of the dependent variables using the SPSS procedure BREADKOWN. In each case, adult learners in continuing education courses were clearly distinct from those in baccalaureate or occupational programs, with the latter two groups showing similar enrollment patterns.

Continuing education adult enrollees showed the highest within-term persistence (87.2 percent, $F = 5.18$, $p < 0.01$), the lowest across-term persistence (35.0 percent, chi-square = 376.04, $p < 0.001$), the lowest frequency (1.87, $F = 169.16$, $p < 0.001$), and highest intermittency (0.844, $F = 53.94$, $p < 0.001$). This, except for within-term persistence (where their higher rate might be due to such factors as the near absence of grade pressure as most continuing education courses are graded pass/fail), continuing education adult learners showed more unstable enrollment patterns than those in college credit programs.

Tables 21 through 24 depict the full detail for the analysis of the relationship between curriculum and enrollment patterns.

Table 21.
Curriculum and Within-Term Persistence

Group	N	Mean	Standard Deviation
Baccalaureate	1,342	0.845	0.2760
Occupational	2,434	0.865	0.2667
Continuing Education	4,937	0.872	0.2801

Sum of Squares:	0.788	df = 2
Mean Square:	0.394	
F:	5.181	Significance: $p < 0.01$

Table 22.
Curriculum and Across-Term Persistence

	Persisters		Non-Persisters	
	N	%	N	%
Baccalaureate	775	54.4%	649	45.6%
Occupational	1,368	53.7%	1,181	46.3%
Continuing Education	2,465	35.0%	4,584	65.0%

chi-square = 376.04 df = 2 $p < 0.001$

Table 23.
Curriculum and Frequency of Enrollment

Group	N	Mean	Standard Deviation
Baccalaureate	1,424	2.31	1.1926
Occupational	2,459	2.26	1.1947
Continuing Education	7,049	1.87	1.0926

Sum of Squares:	432.050	df = 2
Mean Square:	216.025	
F:	169.127	Significance: $p < 0.001$

Table 24.

Curriculum and Intermittency of Enrollment

Group		N	Mean	Standard Deviation
Baccalaureate		954	0.892	0.1861
Occupational		1,642	0.902	0.1807
Continuing Education		3,421	0.844	0.2151
Sum of Squares:	4.391	df = 2		
Mean Square:	2.195			
F:	53.938	Significance: $p < 0.001$		

The following findings relate to all data gathered and are not limited to the statistical analysis of the research questions:

1. The sample consisted mostly of continuing education enrollees (64 percent). This is consistent with the general curricular choice of adult learners.
2. The average age of the sample was 39.7; the median age was 35.5.
3. The bulk of the sample was female, white, part time, and attended primarily in the evening.
4. The most prevalent enrollment pattern found was first-term, one-time only enrollment (45.4 percent). In general, enrollment of multiple terms was much more likely to be consecutive than intermittent.
5. There was a statistically significant relationship between age and two of the independent variables, within-term persistence and frequency of enrollment. In both cases, the relationship was positive. That is, older adult learners tended to complete more of their enrolled-for hours and also tended to enroll more frequently than younger adult learners. The relationship between age and across-term persistence and between age and intermittency of enrollment was not significant.
6. The sex of an adult learner was significantly related to only one of the dependent variables, intermittency of enrollment. The enrollment of adult females proved to be significantly more intermittent than that of adult males.
7. The relationship between ethnic origin and enrollment patterns was significant for three of the four dependent variables (within-term persistence, across-term persistence, and frequency of enrollment). White adult learners were more persistent within-term (87 percent to 84 percent), but nonwhite learners were more persistent across-terms (45.4 percent to 41.4 percent) and tended to enroll more frequently (2.1 terms out of six, compared to 2.0 terms out of six for whites).
8. Average credit load was significantly related to all four dependent variables. In all four cases, the relationship was positive. The higher the average credit load, the higher the within-term persistence, the higher the across-term persistence, the more frequent the enrollment, and the less intermittent the enrollment. The effect was quite strong, with $p < 0.001$ in all tests.
9. There was a statistically significant relationship between the time of attendance (day/evening) and three of the four dependent variables (across-term persistence, frequency of enrollment, and intermittency of enrollment). Daytime attenders tended to have more stable enrollment patterns than their evening counterparts.

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10. Like average credit load, the curriculum of sample subjects was significantly related to all four dependent variables. Because there were three groups possible (baccalaureate, occupational, and continuing education), ANOVA was used to assess differences. Continuing education enrollees stood out from the other two groups, which were closely similar. Continuing education enrollees had the highest within-term persistence (87.2 percent), but the lowest across-term persistence (35.0 percent), the lowest frequency (1.87 out of six terms), and the highest intermittency of enrollment. The within-term persistence advantage might possibly be explained by the pass/fail grading in continuing education courses and the much lower credit load of such students.
11. The use of multivariate techniques (regression, discriminant analysis) revealed that average credit load was by far the most influential variable, accounting for the most variance in each of the dependent variables.
12. Curriculum and age emerged as the other generally significant independent variables as a result of the multivariate analysis. Sex was the only variable that had no significant impact in any of the four regression/discriminant analysis tests.
13. Despite the large number of significant results, the highest R-squared (or variance explained) figure achieved in the regressions was 5.5 percent. Thus, over 90 percent of the variance in the dependent variables (enrollment patterns) was unaccounted for by the variables in the study.

Conclusions

This study attempted to determine the impact of certain demographic (age, sex, ethnic origin) and enrollment choice (time of attendance, curriculum, credit load) variables on the enrollment patterns of adult learners in a community college. The following conclusions were derived from study findings.

Of the independent variables included in the study, average credit load clearly had the greatest impact on the dependent variables of within-term persistence, across-term persistence, frequency of enrollment, and intermittency of enrollment. Adult learners with higher averaged credit loads had much more stable enrollment patterns than did those with lower average credit loads. While this may be useful in a predictive sense, it is natural to ask what the substantive implications of such a finding are. Does this mean that adult learners should be encouraged to take more, rather than fewer, hours? It seems readily apparent that a variable such as average credit load might be more productively treated as a "proxy" for some other, less easily quantified variable. For example, it could be argued that average credit load is an indicator of an adult learner's "commitment" to his/her educational goal. Or, it might be viewed as simply indicating the time available to pursue educational goals.

An effect with less statistical prominence, but more practical significance, is that of curriculum. The results for continuing education students (as compared to baccalaureate and occupational adult learners) reveals nearly half (45.8 percent) of the sample enrolled only for the first term of the study (Fall 1979). This is one area where colleges and universities could attempt to make an impact on retention, by enhancing the stability of enrollment patterns for adult learners in continuing education programs.

The results of the regression and discriminant analysis were particularly revealing. While large sample sizes always increase the chances of uncover-

ing statistically significant results, this seemed especially true in this study. The salient point was that while 17 of the 24 individual statistical tests were significant, the regression models were unable to account for more than 5.5 percent of the variance in the dependent variables, even with all independent variables in the model.

It could be concluded from the above that, if sample size is large enough, many, and perhaps even most, relationships will be statistically significant. However, that does not mean that the effects revealed are particularly central to changes in the dependent variable(s). It is apparent that the significant findings of this study, while useful, did not demonstrate the really important differences among adult learner enrollment patterns. That is, whatever it is that makes one adult learner persist where another drops out or stops out is not substantially captured by the variables included in this study. Approximately 95 percent of the enrollment patterns that currently exist must be interpreted by other variables, if at all.

Bibliography

Alfred, R.L., *Enrollment Profile Report, Fall Semester, 1974.* Brooklyn, New York: New York City Community College, 1975. (ERIC Document Reproduction Service No. ED 111, 480)

Andersen, R.C., *Allegany Community College Attrition Study: Fall Semester, 1975—Spring Semester, 1976.* Cumberland, Maryland: Allegany Community College, May 1976. (ERIC Document Reproduction Service No. ED 122, 878)

Bacon, M.L., Factors affecting retention and loss of associate degree students in University of Kentucky community colleges. Doctoral Dissertation, University of Kentucky, 1976. (University Microfilm No. 77-5677)

Bogue, J.P., *The Community College.* New York: McGraw-Hill, 1950.

Brawer, F.B., *Familiar Functions in New Containers: Classifying Community Education.* Los Angeles, California: ERIC Clearing house for Junior Colleges, 1980. (Topical Paper No. 71)

Breneman, D.W., *The Coming Enrollment Crisis: What Every Trustee Must Know.* Washington, D.C.: Association of Governing Boards of Universities and Colleges, 1982.

Bresler, M., *Course Registration Attrition, Fall 1980-81 and Fall 1971-72.* Phoenix, Arizona: Maricopa County Community College District, 1981. (Analytical Studies Research Report, 81-7) (ERIC Document Reproduction Service No. ED 206, 351)

California State Coordinating Council for Higher Educaton. *Through the Open Door: A Study of Persistence and Performance in California's Community Colleges. Report 3: The Other Side of Persistence.* Sacramento, California: February 1974. (ERIC Document Reproduction Service No. ED 121, 393)

Capoor, M.G., A study to determine the degree to which Murray's personality needs discriminate between dropouts and persisters in a two-year college. Doctoral Dissertation, New York University, 1974. (University Microfilm No. 75-8534)

Conklin, D.D., Jr., An investigation of the academic performance and persistence of readmitted students as related to selected characteristics at two community colleges. Doctoral Dissertation, New York University, 1975. (University Microfilm No. 76-19, 053)

Cosand, J.P., *Perspective: Community Colleges in the 1980's.* Washington, D.C.: American Association of Community and Junior Colleges, 1979. (ERIC Document Reproduction Service No. ED 178, 146)

General Information, Illinois Community Colleges. Springfield, Illinois: Illinois Community College Board, August, 1982.

Gold, B.K., *A Ten-Year Look at Some Enrollment Statistics, 1972-81.* Los Angeles, California: Los Angeles City College, 1982. (Research Study No. 82-3) (ERIC Document Reproduction Service No. ED 213, 468)

Hinkley, L., *Shock Waves: Recommendations for Meeting the Needs of "New" Students.* Chabat College Journal, 4(1) 19-23. (ERIC Document Reproduction Service No. 187, 415)

Hunter, R. & Sheldon, M.S., *Statewide Longitudinal Study: Report on Academic Year 1979-80. Part 4: Spring 1980 Results. Los Angeles Pierce College.* Sacramento: California Community Colleges, 1981. (ERIC Document Reproduction No. ED 203, 953)

Illinois Community College Board. *Data and Characteristics of the Illinois Public Community College System.* Springfield, Illinois, 1983.

Knoell, D.M., *Through the Open Door: A Study of Patterns of Enrollment and Performance in California's Community Colleges.* Sacramento: California State Postsecondary Education Commission, 1976. (Report 76-1) (ERIC Document Reproduction Service No. ED 119, 752)

Larkin, P.G., *How Many Students Are We Losing? Attrition and Inefficiency in Instructional Operations Reexamined.* Largo, Maryland: Prince George's Community College, March 1977. (Report No. 77-11) (ERIC Document Reproduction Service No. ED 143, 380)

Lombardi, J., *Community Education: Threat to College Status?* Los Angeles, California: ERIC Clearinghouse for Junior Colleges, 1978. (Topical Paper No. 68)

Loring, R.K., Adapting Institutions to the Adult Learner: Experiments in progress. *Current Issues in Higher Education.* 1978 National Conference Series, American Association for Higher Education.

Lucas, J.A., *Student Characteristics as Compared to the Community Profile, 1980-81.* Palatine, Illinois: William Rainey Harper College, 1981. (ERIC Document Reproduction Service No. ED 207, 666)

Public Junior College Act, PA 77-1822, Chapter 122, Sections 101-108. Illinois revised Statutes, State Bar Edition (1980).

Seigel, B., *The "Older" Student: Challenge to Academe.* Paper Presented at the Annual Conference of the California Association for Institutional Research. San Francisco, California, 1978. (ERIC Document Reproduction Service No. ED 149, 835).

Selected Financial and Enrollment Data: Maryland Community Colleges. Annapolis, Maryland: Maryland State Board for Community Colleges, January 1982.

Zwerling, S.L., The New "New Student," The Working Adult. *New Directions for Community Colleges (No. 32) San Francisco, California: Jossey-Bass, Inc., 1980.*

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Institutional Research and End-User Computing: The Development of an Information Center*

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Introduction

The concept of an "information center" is relatively new to the fields of data and information processing. An information center brings together fourth generation computer software, expertise in the use of this software, and the end-user. Its function is to improve the information processing productivity of college staff, their offices, and the college as a whole. An information center provides a mechanism for "integrating human resources and technology."

Advances in computer software over the past ten years have made the development of information centers a possibility. This software allows end-users to create or access existing data bases without the lengthy and technical processes involved in traditional programming techniques, such as with COBOL.

The development of information centers within higher education will have a significant impact on the future role and direction of institutional research. Institutional researchers should be involved in the creation of an information center since they have the expertise to help users in transforming operational data into relevant management information. Institutional researchers need to be involved if they are to maintain and enhance their role in assisting decision-makers.

The purpose of this article is to chart one possible future direction for the evolution of institutional research. It is argued that, due to the environment facing higher education in the 1980's, some form of evolution is required if institutional research is to remain a viable asset for decision-makers in our colleges and universities.

The role that institutional research can move toward is to assist decision-makers in employing modern computer technology to find, process, and distribute information. An information center provides a means for achieving this objective.

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Forces Leading to Emergence of Information Centers

This article uses separate but interrelated themes within the literature on data processing and institutional research. First, the concept of an information center springs from the data processing literature on fourth generation software (Martin, 1982). On the other hand, institutional researchers have focused on the use of fourth generation software in creating decision support systems (Updegrove, 1981). The recent issue of New Directions for Institutional Research focuses on managing the new information technology (Sheehan, 1982). The forces leading to the emergence of information centers are 1) advances in computer hardware and software, and 2) the end-user movement.

Advances in Computer Hardware and Software

The fact that the computer hardware has become more powerful and less expensive has tended to hide the strategic advances made in computer software. Today's easy-to-use fourth generation software is changing drastically the way data can be processed. In order to provide a perspective for today's fourth generation software, the first three generations are reviewed.

First generation software was the mathematician's world of BOOLEAN ALGEBRA. The binary logic of each computer's machine language was and still is used to control the computer. This machine language was simplified by creating assembly language codes, which made it easier for mathematicians or programmers to manipulate the machine language. These second generation assembly languages were further simplified by creating the English language commands of FORTRAN, COBOL, and BASIC, which translate into assembly language and into machine language.

These third generation software languages are usable by non-mathematicians; however, users still need to tell the computer how to do what is wanted. The emerging fourth generation languages allow the everyday end-users to tell the computer "what to do" without struggling with "how to do it." Specialized languages, like VISICALC, SPSS, and Word Star are examples within accounting, statistics, and word processing.

End-User Movement

"End-Users" are people who develop productive computer uses for themselves primarily by themselves. The data processing literature has many stories of the successes that end-users have had in developing their own information systems. This is because the advent of microcomputers, fourth generation software, and distributed systems have decentralized computer use. Instead of relying on a centralized data processing staff, many users are creating their own systems. Although there are many benefits to be derived from this expansion of computer use, it does create large problems in terms of the comparability, integrity, redundancy, security and transmission of data. This situation, in turn, can lead to problems in furnishing information to upper management when it has to be consolidated from separate and incompatible systems.

Facilitating Improved Productivity

To insure that the use of computer resources serves organizational objectives without constricting the flexibility of user independence, a two prong approach is required. First, a system review group is needed to oversee and coordinate the growth of computer use. This group must develop a strategic plan for computer resources, review hardware and software purchases to insure compatability, and set priorities in application development (Mann, 1982 pp. 36-39). Thus, this system review group can act as a mechanism to resolve the management problems that arise with the proliferation and decentralization of data processing. The second part of this approach involves the formation of an information center.

The information center becomes the mechanism by which expansion of computer use and decentralization can be implemented in an orderly fashion. An information center provides the resources for computer users to optimize their efforts. This would include training and guidance with respect to existing information and available computer resources. It includes educating the users with regard to systems development guidelines and documentation standards as they design their own systems. Information center staff can work with end-users in developing their ideas into detailed specifications for which a prototype system can be created. Information center staff could also develop some of the strategic information systems needed to support upper management's decision-making. (O'Connell, 1982; Murry, 1983; Rhodes, 1983).

An information center serves two separate but interrelated data processing needs. First, it serves as a supplement to operational systems. For example, our college has a COBOL based on-line student registration system. However, because of the large backlog of system development projects, there was no data processing system for the admission selection process for limited enrollment programs (i.e., nursing, automotive, electronic engineering, etc.). Since such a system could not be accommodated within the existing application development resources, the information center approach was an alternative choice for developing and implementing the system. Other offices have already, or are considering the development of special information systems using their own staff and the improved computer technology.

Second, third generation software systems (such as COBOL-based systems) are usually very strong in meeting high volume transactional operational needs but weak in terms of management decision support. That is, ad hoc query and reporting is almost non-existent in a truly timely manner. An information center provides the staff, hardware/software resources, training, and technical support to meet part of this strategic need which has traditionally been served by the institutional research office.

Prerequisites for Information Center Development

The establishment of an information center requires short-term reallocation of resources and long-term changes in the way people approach the use of computers. The reallocation of resources is justified in the short-term by improvements in productivity. The longer term effects of personnel shifts are also significant. The emphasis for the centralized Data Processing (DP) staff will shift from application development to the more specialized functions of systems design, data base management, data communications, and quality control.

That is, their role will change from the producer of a product to that of facilitator. The users must become more directly involved in systems development if they are to realize the benefits of technological advancements. Finally, non-DP managers must become more directly involved so that they can guide the development of their own information systems. Thus, the prerequisites for information center development are (1) the recognition of need (2) data base considerations, (3) a pilot test, (4) definition of roles, and (5) budget committment.

Recognition of Need

As with any major organizational change, support from upper management is critical. Further, this support is not limited to resource allocation and personnel shifts. Since a major goal of an information center is to advance support systems, management must become directly involved in order that the resulting information products reflect their needs. This does not imply that management must know exactly what information will be required to assist in furture decisions. If this were the case, they would probably not need the information in the first place. What managers should do is develop a conceptual view of institutional processes, out of which decisions requirements grow, and then guide the information systems development so that it will reflect these institutional processes (Bryce, 1983). Such systems design methodology requires time, patience, and firmness of leadership; and it is in this endeaver that the true test of management support lies.

An example from our institution illustrates the importance of systems design methodology underlying the development of a decision support system. Recurring budget crises over the past few years required detailed analysis of the budget at the program/discipline level. Actual and projected costs by programs were needed. Unfortunately, the college's computer systems could not be harnessed to assist since the actual cost data was not available. The computerized financial system recorded expenditures only down to the department level and not down to the discipline level. The computerized data elements did not reflect institutional processes. As a result, response to the budget crisis in terms of meeting information needs was long, laborious, and detracted from the central issue of making critical budget decisions. How an information center can help in resolving this dilemma is described in the next section.

Data Base Consideration

Resolving the information "gap" with regard to the college's budget crisis has been made possible by the emergence of fourth generation software. However, for these tools to be effectively used, a sound data base must exist and be accessible (Martin, 1982; pp. 265-286). Information needs of upper management are often not met in a timely manner due to the fact that data does not exist in the proper form within the data base or cannot be easily accessed. Thus, a major technical prerequisite to the emergence of a viable information center is the existence of a rational data base. It is also important that the data base be understood by the users - at least at the conceptual level. This is necessary, since most user applications will be derived from the existing data, or integrated into the data base. This data base is an institutional resource which must be nurtured and understood in order to optimize its value.

A Pilot Test

A pilot test is recommended to demonstrate the feasibility and cost effectiveness of an information center to key decision-makers and the user community.

(James Martin, 1982; pp. 161-177) describes the case of Santa Fe Industries, Inc., in which a production control system was developed by shop floor personnel using the software MAPPER developed by Sperry Univac. The system was developed independent of DP and eventually involved several hundred users. The situation that arose at Sante Fe Industries is not unusual. The DP department had projected years to develop and implement the system desired. When the manufacturing division decided to buy its own computer and software, DP expected a complete failure. However, the shop personnel were able to learn how to use MAPPER. Of course, some people learned it very well, and in effect, became MAPPER experts. Within months they were able to develop the basics of a production control systems, and then gradually expanded the system to include a number of users. Eventually DP accepted the MAPPER based system. An interface was developed between IBM and the Sperry Univac used by manufacturing.

Of course, all of this could have been coordinated and centrally planned in the first place. However, because of resistance to change and other organizational problems, the Sante Fe experience is likely to be repeated before coordinated efforts become more common. For other examples, see (O'Connell, 1982), (Snyder, 1982), (Murry, 1983), (Rhodes, 1983) and (Kull, 1983).

Definition of Roles

Once the value of fourth generation software tools and the concept of an information center have been accepted, it is important to define role changes. To allow user computing to proliferate uncontrolled can lead to several long-term problems affecting computer system performance, the integrity of the data base, and duplication of effort among others. The role of a system review group in providing policy and coordination at the institutional level has already been discussed. The information center can play a supportung role by working directly with users who develop and implement their own information systems.

All of this requires a change in the role played by users, computer services, and non-DP managers. The various approaches that can be used to organize the functions of an information center are discussed in the following section. Regardless of the scheme selected, however, there will have to be a change in roles. The most critical change occurs with regard to the relationship between non-DP manager and the design of the information system. But this is not the same as the traditional development of a management information system, as perceived in the 1970's. That approach assumes that non-DP managers could identify all their information needs in detail. When the unexpected occurred and information needs changed, the "hardwired" system was not able to respond in adequate fashion. As a result, the goals of a management information system, which has become confused with the means, fell into disfavor.

The goals of a management information system are now within grasp. A combination of good system design methodology, fourth generation software, and management involvement can result in the realization of flexible decision support systems capable of responding to changing conditions. For this to occur however, the function of an information center must be kept separate from DP. The highest priority of DP must be quality control, or stated differently, data integrity and operational efficiency. The priority for the information center

must be decision support systems which transform data into usable information. For this to occur, the information center should be responsible to upper management and have a close liaison with DP, especially in data base planning.

The relationship between the end-users and the information center suggests further role changes. The commitment and involvement of management must provide the leadership required to overcome natural resistance to change within an organization. User independence should be encouraged but also controlled; thus, contributing to the growth and quality of the institution's information resources.

Budget Commitment and Perceived Benefits

The establishment of an information center requires an analysis of the cost versus the benefits to be derived. The primary cost item for an information center is personnel. This includes center staff as well as staff time from other offices. Whereas information center staff cost is fixed, the cost to the user community is primarily upfront in the form of training time. The cost of information center staff could be minimized by refocusing existing staff with similar responsibilities such as institutional research or computer services. This has basically been the approach taken at our college. The refocusing was made possible since the first offices to reap productivity increases from fourth generation software were institutional research and computer services.

The benefits of an information center are both quantitative and qualitative. Quantitative benefits are measured primarily in terms of productivity, which is derived from the use of fourth generation software. With users doing more of their own data processing, and with applications taking less time to develop, maintain and document. An information center can help to control data processing costs while providing the necessary output (Kull, 1983). Qualitative benefits include an improvement in the quality of information available to assist decision-makers. Fourth generation software allows data to be manipulated with speed and flexibility. As a result, managers are able to derive more and better information from the data base. This in turn leads to better decisions and further cost saving.

The 1980's is a period of financial hardship for much of the higher education community requiring tough decisions for achieving reduced costs. An information center contributes directly by producing better information at a relatively lower cost than otherwise would be possible.

Alternative Approaches to Starting an Information Center

At different institutions, depending on the abilities, sensitivity, and leadership of various offices, alternative approaches for starting an information center can be taken. While the centralized DP staff, the Computer Science faculty, and the Institutional Research staff should all play a role, someone must take the lead. Perhaps a newly created office is the answer. However, today's financial environment may suggest that an existing office be given the responsibility of working with the end-users to optimize the potential of fourth generation software. Whichever office is given this responsibility, it should employ the existing resources from other offices. For example, Computer Science faculty could guide the development of end-users training activities; Institutional Research

staff could help the end-user in identifying appropriate data sources, data definitions, analysis methods, and reporting techniques; and Data Processing staff could help the end-user with particular computer's operating systems, with data base planning, and development of a network through which information resources can be shared.

Institutional Research offices are at a crossroad as the impact of this new information technology is felt. Three alternatives exist for Institutional Research according to (Hample, 1983); (1) Institutional Research could become obsolete, (2) Institutional Research could save campuses from "Information Anarchy," or it could serve as a guide in information system development. Institutional Research can take its decision support role a step further by providing leadership towards an information center for end-users as well as towards systems review for all new or modified systems. Information system development needs policy, procedures and leadership.

One College's Experiences

Current Status

In order to illustrate the above discussion, one institution's experiences will be used to describe the evolution of an Institutional Research office toward performing information center functions.

At the college in question, the COBOL based financial system did not include procedures for budget development. Thus, each year the college's budget was put together manually. Further, the budget aggregated data to the division level (i.e., the Allied Health Division) and all program detail data was subsumed (i.e., Nursing, Dental Hygiene, etc.). The process was complicated by the fact that many individuals were assigned to more than one program and/or division which made the process both tedious and complicated. Another necessary element, "what if" calculations, was so time-consuming that it was impractical.

The backlog in data processing applications made resolution of these problems years away. Thus, Institutional Research, the Office of Instruction, and the Business Office combined efforts to computerize the budget building process using a fourth generation software language. The language is INFO, a relational data base management system develop by HENCO, Inc. (Stevenson and Walleri, 1982). Because of the user friendly nature and flexibility of INFO, the college's budget system was completely computerized within a few months.

The success of the budget project soon led to the expansion of info within other offices. The Financial Aid Office learned of INFO and computerized a student financial aid application record system. This not only improved the effectiveness of the Financial Aid Office, but also eliminated another system from Computer Services' application backlog.

Other applications have included an equipment inventory system for Plant Services, a tuition revenue projection model in the Business Office, and an admission application system for limited entry programs for the Office of Admission and Records. A few offices have begun to use INFO to prepare various operational reports once prepared by hand.

During this process Institutional Research remained the major support unit. In some cases this has included design, programming, training of users, documentation and maintenance. In cases where the users have learned to do their

own programming, Institutional Research has provided training, technical assistance and acted as liaison to Computer Services.

Finally, Institutional Research, through its expertise in using INFO, has been able to respond more effectively to ad hoc requests for information from upper management. For example, using the INFO budget data base, reports were generated for total direct cost per student FTE and for supplies and equipment cost per FTE. These reports were then used to assist in making budget decisions within an institutional evaluation process (Stevenson and Walleri, 1980 and 1982).

The Future

This college is moving toward the adoption of relational data base management system using fourth generation software for query, reporting, and application development. To meet increasing need for data processing services, the college is also developing a distributed network of minicomputers. Within this environment, office automation and electronic mail software can be installed to increase office productivity even more. A software library has been established to allow for specialized analysis of data to meet specific information needs. This library includes statistical routines and a financial modeling language to compliment the query and reporting capabilities available.

Within this environment, an information center can assist end-users in maximizing the benefits to be derived from the growing array of hardware and software. The ability to use computers will increasingly become a necessity within society in general, and higher education administration in particular. Some mechanism must be found to facilitate and guide this advance within our institutions. An information center represents a logical and efficient means for coping with this transition.

Implications

The implications of an information center should be viewed from an institutional wide perspective as well as with regard to institutional research. The primary benefits of an information center for college is that it will improve the information available to decision-makers while also helping to constrain data processing and other administrative costs by allowing staff to be more productive.

The role of institutional research is likely to undergo a shift in emphasis. That is, rather than providing information in a formal report format, institutional researchers will more likely assist decision-makers, or their support staff, in retrieving, analyzing, and reporting needed information directly. This should allow institutional researchers to concentrate on more strategic and sophisticated information needs. Further, institutional researchers will likely become more involved in the selection, testing, and development of computer hardware and software.

References

Bartimo, Jim. N.H. "Governor trying to abolish central dp." *Computerworld*, March 14, 1983, Vol. XVII, p. 6.

Batt, Robert. "Trends impact software profile." *Computerworld*, January 31, 1983, p. 1-6.

Bryce, Milton. "Information resources mismanagement." *Infosystem*, February, 1983, pp. 88-92.

"BSI poll sees micro user training in works for '84." *Computerworld*, April 4, 1983, p. 15.

Dodge, John M. "Information resources mismanagement." *Infosystem, Software News*, November 1, 1982, Vol. 2, No. 11, p. 2.

"Dp managers pleased with info centers." *Computerworld*, February 7, 1983, p. 31.

Gillion, Paul. "Micros Blitz Dp." *Computerworld*, February 14, 1983, Vol. XVII, No. 7, pp. 1-4.

Hample, Steve. "The impact of information technology: Will it survive?" Unpublished manuscript, Institutional Research, Montana State University, April, 1983.

Kull, David. "Generators multiply output." *Computer Decisions*, January, 1983, Vol. 15, No. 1, pp. 122-179.

Mann, Richard L. "Institutional applications of new information technology" in B. Sheehan (Ed.), *New Directions for Institutional Research: Information Technology, Innovations and Applications*, No. 35. San Francisco: Jossey-Bass, September, 1982.

Marebghi, Catherine. "John Diebold talks about information management," *Computerworld*, December 6, 1982, pp. 1-28.

Martin, James. *Applications Development Without Programmers*. Englewood Cliffs, N.J.: Prentice Hall, 1982.

Mazursky, Alan D. "Smooth Sailing." *Computerworld*, February 23, 1983, Vol. 17, No. 8A, pp. 16-24.

Murry, John P. "Developing an information center at Rayovac," *Data Management*, January, 1983, Vol. 21, No. 1, pp. 20-25.

O'Connell, Daniel J. "The information resources center," *Computerworld*, September 29, 1982, Vol. 16, No. 39A, pp. 35-38.

Paul, Lois. "Group cites application generators' potential," *Computerworld*, June 21, 1982, p. 15.

Rhodes, Wayne L., Jr. "The information center extends a helping hand," *Infosystem*, January, 1983, Vol. 30, No. 1, pp. 26-30.

Seidman, Marsha. "Computer-based training: fulfilling the promise of the information center," *Computerworld*, December 13, 1982, In Depth, pp. 7-13.

Sheehan, Bernard S. (Ed.) *Information Technology: Innovations and Applications*. New Directions for Institutional Research, No. 35. San Francisco: Jossey-Bass, September, 1982.

Snyder, Jan. "Generators do the trick." *Computer Decisions*, June 1982, pp. 210-228.

Stevenson, Michael R. and Walleri, R. Dan, "Application generators, their impact within institutional research and beyond." Presented at the Twenty-Second Annual Forum of the Association for Institutional Research, Denver, Colorado, May 16-18, 1982. (ED 220, 036)

Stevenson, Michael R. and Walleri, R. Dan, "Budget unit analysis in an era of retrenchment, the interface between financial planning and program evaluation." Presented at the Twenty-Second Annual Forum of the Association for Institutional Research, Atlanta, April 1980. (HE 012, 856)

Updegrove, D.A. "Using computer-based planning models." In N. Poulton (Ed.), *New Directions for Institutional Research: Evaluation of Management and Planning Systems*, No. 31. San Francisco: Jossey-Bass, September, 1981.

Studying Employer Needs in a Time of Change

Robbie Lee Needham

Studying the needs of employers who are engaged in training their employees presents several problems for researchers. These problems arise, first, from the confidentiality of the information needed for a study; secondly, from the kinds of information available to the researcher; and thirdly, from the varying importance placed on training employees and the varying organizational planning done by employers. Another potential problem is the rapid change in the workforce caused by changes in the workplace.

This researcher experienced the impact of technological changes on the occupations in the workforce during a study conducted for Tri-County Technical College in South Carolina. The College serves three counties in the industrial heartland of the state. While textiles are the largest industry, many other goods are produced. College leaders were undertaking a major curriculum review for which they needed information from area employers about trends in their businesses that could affect curriculum and instruction at the College.

The College contracted this researcher to conduct a comprehensive employer needs study. While the study produced extensive data, the emphasis of this report will be on the employer's responses to questions about the employment potential in their business for current and emerging occupations and about characteristics of their workplace in 1990. These questions were developed to ensure a future thrust for parts of the study and to use some of the information from futurists studies.

Method

College administrators wanted the Principal Investigator to use the personal interview method in collecting data. They also requested that high-level decision makers be interviewed throughout the economic base of the three-county service area.

Prior to developing the systematic interviews, the Principal Investigator conducted thirty interviews with area executives. Information from these helped in determining the content of the structured interviews. The final interview questions were field tested and adjustments made before interviewers were trained to use the questionnaire, which included open-ended, structured and semi-structured questions. The latter were checklists of probable responses which the interviewer could mark, if the interviewee mentioned items on the list. Interviewers were not allowed to prompt respondents, however.

The sample for the 105 structured interviews was selected to parallel the economy of Tri-County Tech's service area; 48% manufacturing and 52% non-manufacturing. Businesses and industries to be interviewed were selected by random techniques proportionate to their strength in the economy of each of the three counties served by the College. The non-manufacturing segment was further divided into subgroups: Retailing; Information, Health and Human Services; Service; Other Goods Producing and Agriculture.

The data from the open-ended responses were analyzed manually. The information from the structured responses were analyzed with the aid of the Statistical Package for the Social Sciences, Edition X. Frequencies were computed for all items, and crosstabs by segment subgroups and by the number of full-time employees were performed as appropriate.

Threats to the Validity of the Study

Personal interviews are always threatened by potential for interviewer bias. Further, interviewers were not allowed to probe for items on the checklists in the semi-structured questions, thus the data obtained may be less accurate than if they had specifically asked about each item on the lists.

Selected Results

Occupations with a Future

Respondents were asked in two different ways about occupations which appeared to have bright employment prospects during the next 20 years. First, they were asked what occupations requiring up to two years of postsecondary education would have a future in their business. Their responses included: Middle Managers, Computer Operators and Programmers, Secretaries, Electronics Technicians, Machine Maintenance Persons, Nurses, Emergency Medical Technicians, and people with skills in marketing (both statistics and sales).

The employers' responses were more wide-ranging than this list, which presents only the most frequently suggested occupations. The occupations cited were quite similar to those named in area, state and national occupational forecasts.

Interviewees were also asked about the future of specific occupations in their organization. Many of the occupational titles used were for emerging occupations noted in interviews with TCTC staff, in preliminary interviews with executives as well as in futurist literature such as *Encounters with the Future* and *Megatrends*. Most were not yet in the Dictionary of Occupational Titles. Both manufacturers and non-manufacturers were querried about new occupations. They were also asked to estimate when each occupation would become a part of their organization. Those occupations labeled '83 were already in existence at the time of the interviews. The median of the years suggested is shown for the others.

Table 1.
Employment Potential Anticipated for Selected Occupations

	Manufacturing % Yes	Non-Manufacturing % Yes	Median Year
• laster technician	28	13	'88
• chemical technician	43	19	'87
• chemical engineering technician	17	NI	'83
• environmental technician	36	17	'83
• robotics production technician	53	NI	'88
• robotics maintenance technician	62	19	'85
• documentation librarian	21	NI	'87
• hazardous waste technician	23	21	'84
• computer integrated manufacturing technician	53	NI	'88
• quality assurance technician	87	31	'83
• secretary with word processing skills	79	56	'85
• computer assisted graphics	40	28	'85
• holographic inspection specialist	19	NI	'88

NI – not included

Again, some of the results paralleled occupational forecasts for South Carolina and the United States which indicated that secretaries with word processing skills will be in demand throughout the economy. Several of the respondents mentioned that secretaries in the future would need skills in computer operations and information management.

The respondents indicated good employment prospects for Robotics Technicians and Computer Integrated Manufacturing Technicians, emerging occupations associated in the literature with heavy manufacturing. Quality Assurance Technicians also seemed to have good employment prospects. However, on the basis of information gained from other sections of the interviews and from crosstabs performed on the data, the latter were deemed to have reduced employment potential since most manufacturers already employed Quality Assurance Technicians in sufficient numbers, leaving only replacement positions for future hiring. Further, many manufacturers saw a change in quality control efforts toward placing responsibility for assurance with all employees rather than chiefly on quality control specialists. Both factors suggested lower employment potential for Quality Assurance Technicians.

Although Chemical Technicians, Laser Technicians and Computer-Assisted Graphics Technicians were not anticipated so much as others, they drew enough positive responses to warrant further attention, especially given the nature of businesses in the College service area.

Crosstables of the occupational titles against the products manufactured showed a broad distribution of the occupations among the industries. Generally, within each of the 13 Standard Industry Codes (SIC) there were positive responses to most occupations, with some being much stronger than others. The diversity of responses to a specific occupation within the same SIC may have been an index to change in industrial occupations in the area at the time of the interviews, which were conducted between July 20 and August 5, 1983.

The non-manufacturing segment of the sample was questioned more extensively than the manufacturing segment about emerging occupations due to the more varied purposes of the businesses in this segment of the sample. They responded as follows to the additional occupations (Table 2).

Table 2.

Employment Anticipated for Selected Occupations Non-Manufacturing Segment and Subgroups

Group	% Indicating That Occupations Had a Future in Their Business				
N	T 55	02 14	03 16	04 17	05 8
• marketing specialist	33	62	4	24	13
• recreation specialist	17	0	44	0	25
• emergency medical technician (EMT)	19	7	31	24	0
• gerontological technician	6	0	31	24	0
• automotive fuel cell (battery) technician	18	14	19	18	13
• energy technician	14	0	25	12	13
• housing rehabilitation technician	16	14	19	71	13
• data processing machine mechanic	37	36	31	47	13
• computer programmer	55	50	38	65	50
• computer operator	69	71	50	71	63
• office machine service technician	31	21	31	35	25
• employment interviewers	33	36	38	29	13
• fast food restaurant worker	12	7	19	12	0
• child care worker	20	7	44	12	0
• chef	16	0	19	29	0
• salesperson	55	93	19	35	75
• career counselor	16	7	19	24	0

Subgroups: 02 Retail
03 Information, Health & Human Services
04 Service
05 Agriculture and Other Goods Producing

The responses clearly suggested that people skilled in sales and in using computers are apt to be most in demand in the future. The College, which like many other colleges has not traditionally been very involved in sales training, may wish to review some of its curricula since sales skills appear to be related to successful performance in many non-manufacturing occupations.

When these data were crosstabulated by subgroups of non-manufacturers, the results showed variances among classifications (see Table 2). It should be helpful to college planners to know that respondents from each segment subgroup anticipated employment potential for Employment Interviewers, Marketing Specialists and Service Technicians for data processing and other office machines since these are emerging occupations. Other responses indicated good employment prospects for occupations currently supported by College programs: Secretaries with word processing skills, Computer Operators and Programmers.

Workplace of 1990

Another group of questions dealt with the workplace of the future. Interviewees were asked to indicate the probability that their business would be accurately described in 1990 by the following statements (Table 3).

The relatively small percentage who responded "do not know" suggested that respondents were actively thinking about the workplace of the future.

The responses of the two sample segments were analyzed further. When viewed from the perspective of different kinds of businesses, manufacturers and non-manufacturers responded differently enough to warrant separate consideration by the College in curriculum planning.

Only four of the descriptions appeared highly probable to more than 50% of the manufacturers: computer-based office equipment; company sponsored training involving media; the necessity for employees to upgrade their skills, even retrain; and employee participation in problem solving. Somewhat surprising was the lack of anticipation for the use of computer-aided design and computer-aided manufacturing. And the lower than expected anticipation for the use of lasers in a variety of manufacturing processes was difficult to understand, given the host of predictions of future applications for all three throughout the economy. The College may want to monitor the inclusion of lasers and CAD/CAM into area manufacturing over the next two years, since manufacturing technologies are changing rapidly.

College planners can use the data regarding employee training, computer-based office equipment and employee participation in problem solving in its planning. They can help the College think strategically about its role in employee retraining, upgrading, further education and lifelong learning. College leaders can also develop learning requirements that enable learners to function well in offices with computer-based equipment. Finally, they can plan curricula for employees and employers who are collaborating more in problem solving on the job.

The responses of the non-manufacturing segment of the sample were also analysed by subgroups as shown in Table 4.

Table 3.

Descriptions of the Workworld in 1990
Is This An Accurate Description for Your Business in 1990?

% Manufacturing						% Non-Manufacturing				
A	H	M	L	DK		A	H	M	L	DK
45	38	6	11	0	• Office staff are using computer-based equipment.	30	46	15	9	0
6	4	21	53	0	• Lasers are being used in a variety of ways here.	8	23	17	32	21
4	23	15	45	13	• Computers locate, diagnose, and repair most of their malfunctions without human intervention.	0	38	21	33	8
NI	—	—	—	—	• So much information is available that people feel frustrated by trying to use it.	7	36	18	36	2
15	36	17	28	4	• Employees have access to company-sponsored training and education through such means of communication as cable TV, communications satellites, video cassettes, video discs, personal computers.	19	44	13	17	7
4	17	26	53	0	• Many employees here have flexible work schedules.	25	33	22	18	2
4	11	21	60	4	• At least one-third of the employees here work part time (fewer than 40 hours per week).	22	35	11	30	2
4	62	28	6	0	• People expect to upgrade their skills, even retrain for new skills several times during their worklife.	7	55	22	11	5
19	45	26	11	0	• Employees here systematically participate in problem solving on the job with group of co-workers.	18	44	18	0	4
NI	—	—	—	—	• People in many jobs will be trained in and expected to use sales techniques as the environment is very competitive.	16	45	15	16	7
NI	—	—	—	—	• Employees believe that serving customers or clients is their first responsibility; they have adopted a service attitude.	35	53	7	5	0
9	32	28	30	2	• Computer-aided design and computer-aided manufacturing are used extensively here.	NI	—	—	—	—

A – Already, H – High, M – Medium, L – Low, DK – Don't Know, NI – Not Included

Table 4.

Workworld in 1990 by Sample Segments and Subgroups

	% Responses "Already" and "High" for Combined Non-Manufacturing				
Segment*	**T**	**02**	**03**	**04**	**05**
N	**55**	**14**	**16**	**17**	**8**
Office staff are using computer-based equipment.	76	71	75	76	—
Lasers are being used in a variety of ways.	31	31	31	31	25
Computers locate and repair their own malfunctions.	38	50	25	31	62
People are frustrated by trying to use information.	43	64	38	41	25
Company-sponsored employee training uses variety of media.	63	62	50	82	50
Many employees have flexible work schedules.	58	71	50	71	25
At least 1/3 of the employees work less than 40 hours per week.	57	50	69	56	50
People here expect to upgrade, even retrain.	62	64	44	88	38
Employee systemically participate in problem solving.	62	57	69	65	50
People use sales skills in competitive environment.	61	71	50	76	38
People put service to clients and customers first.	88	86	88	94	75

*Segment Subgroups: See Table 2.

In this sample segment, only three of the descriptions did not seem likely to more than 50% of the respondents: lasers, computers capable of self-repair, and companies sponsoring employee training that used a variety of media. The latter response may have been more related to company sponsorship than to training *per se* or to the use of various media for employee training.

The world of work outside manufacturing may change considerably during the remainder of the decade, which should suggest a number of challenges and opportunities for planners and instructors at the College. At the very least this study presents descriptions of the variety and complexity of the growing

Service and Information sectors of the economy as well as the increasingly competitive Business sector. Further, and in contrast to manufacturers, it presents businesses with more flexible work schedules for employees, and more part-time employees. Each would affect modes of instructional delivery and course scheduling decisions for the College should it seek learners employed by non-manufacturing businesses.

Discussion of Employer Needs Studies

Respondents usually replied quickly when asked to name occupations that had a bright employment future in their organization, and they used established occupational titles. When they were asked about specific emerging occupations, the same respondents were very comfortable and quick to reply. No interviewee among the manufacturing segment asked for a definition, and only a few among the non-manufacturers asked about a Holographic Inspection Specialist. They seemed to have a working definition for each of the titles.

This experience with interviewees who were at high levels within their organizations reveals the gulf between current occupational titles and emerging occupations. In the current environment of change, the gulf is apt to widen, hence it may be very important for researchers to include specific techniques for seeking information about emerging occupations in future studies.

Going one step further, it is possible that employee needs studies that rely on occupational titles, current or emerging, may be less productive than studies that focus on the skills needed by employees to contribute to the success of the business. Both curriculum planners and employers could benefit from a focus on skills.

Other Implications for the Future

Policy and Practices

Given the increasing use of technology and the incorporation of the computer into all phases of the area economy, the College needs to consider a policy on technological or computer literacy.

The College has an opportunity to provide leadership in convincing employers that educators are best qualified to name new occupations, identify the skills required and train people for them.

The College will benefit from creating and cultivating linkeages with the Information and Service sectors of the economy as it has from liaisons with Business and Industry.

Research and Planning

If they do not already do so, staff need to develop and use skills from future research in the ongoing research and planning efforts of the College (i.e., forecasting, trend extrapolation, scenarios, mapping, Delphi, models, games and simulations).

Researchers can make a significant contribution to the planning process by developing techniques and instruments to support college leaders in their efforts to market college services for establishing new occupations. The planning and research staff can play a key role in assisting other college staff in determining the curricular needs of an instantly changing society in the information age.

AACJC REPORT: National Indicators and Enrollment Figures

Rosemary Wholers

The most prominent characteristic of the two-year college field is growth. The number of community, technical, and junior colleges grew fairly steadily until the 1960's at which time the rate jumped to the startling average of about 50 new colleges a year. One data item regularly collected in the American Association of Community and Junior College's annual *Directory* survey is the year in which the college was established. According to the 1,219 colleges listed in the 1984 edition of the *Directory,* the following tabulations illustrate this growth:

Year of Establishment	Number of Colleges
1900 - 1959	404
1960 - 1970	636
1971 - 1983	201

Early in the century, private junior colleges held the majority, but today, the number of public colleges far out-number the private colleges.

1983

Number of Colleges	Enrollment
1,064 public	4.8 million (credit; opening fall)
155 private	.15 million (credit; opening fall)

Enrollments in community, technical, and junior colleges also grew by leaps and bounds in the same time period.

All Two-Year Colleges

Year	Number of Colleges	Enrollment
1963	719	914,494 (credit; opening fall)
1973	1,165	3,144,643 (credit; opening fall)
1983	1,219	4,947,975 (credit; opening fall)

After growth, the second most obvious characteristic of two-year colleges is their diversity - especially among the student body. It is difficult to present a "typical" community, technical, and junior college student. However, the following data items should be helpful in understanding its diverse population:

1983 Opening Fall Data

Part-Time Students	3,113,981	(63%)	**Women**	2,494,834	(53%)
Full-Time Students	1,833,994	(37%)	**Men**	2,198,067	(47%)

1982 Opening Fall Data

	Non-Resident Alien	Black, Non-Hispanic	American Indian/Alaskan Native
All Institutions	328,618	1,085,908	87,444
Two-Year Colleges	61,562	472,208	47,758

	Asian or Pacific Islander	Hispanic	White, Non-Hispanic
All Institutions	349,915	516,504	9,878,419
Two-Year Colleges	157,838	286,904	3,590,993

One explanation for the continued growth and success of the community, technical, and junior colleges is the general low cost of attendance. Each fall, the AACJC data office surveys state-level officials to determine what factors influence enrollment increases or decreases in their state. Among the states that indicated enrollment increases, 37% cited general low cost as a major factor.

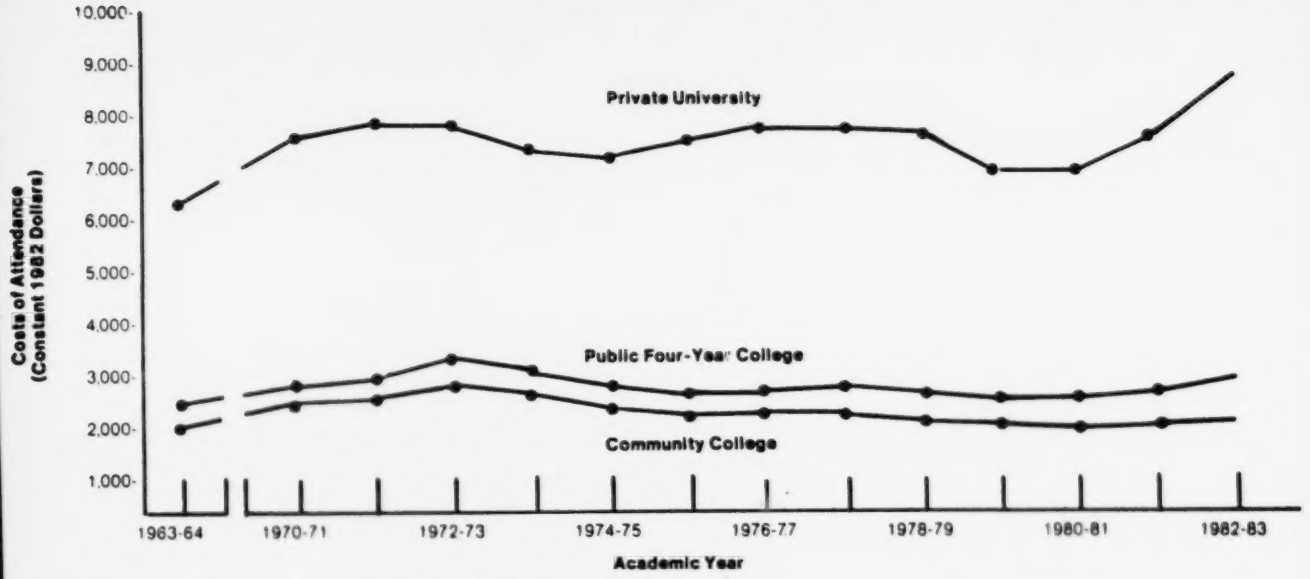
Cost of Attendance (current dollars)*

	Private Univ.	Public Four Year	Community College
1982-83	8,537	3,032	2,390
1981-82	7,491	2,706	2,250
1980-81	6,566	2,419	2,018
1979-80	5,888	2,198	1,817
1977-78	5,193	1,924	1,590

*Costs are for the nine month academic year, and include tuition, fees, room, and board.

Figure 1

Costs of Attendance
(Constant 1982 Dollars)



Note: Costs include tuition, fees, room, and board. Based on Table A-10 in Appendix A.

Many of the data items presented in this article are gathered from our *Directory* questionnaire form. I would like to take this opportunity to thank the colleges that so carefully responded to this annual effort. Persons wishing to receive the 1984 *Community, Technical, and Junior College Directory* should write or call:

Publishers Services
80 S. Early Street
Alexandria, Virginia 22304
800-336-4776

References

American Association of Community and Junior Colleges. *1984 Community, Technical, and Junior College Directory.* Washington, D.C.: American Association of Community and Junior Colleges, 1984.

Council for Financial Aid to Education. *Two-Year College—The Current Phenomenon in Higher Education.* New York: Council for Financial Aid to Education, Division of Research, 1973.

Gillespie, Donald A. and Carlson, Nancy. *Trends in Student Aid: 1963 to 1983.* Washington, D.C.: The College Board, 1983.

The National Center for Education Statistics. *Enrollment in Institutions of Higher Education, by Ethnicity of Student and Control and Type of Institution: 50 States and D.C.; Fall 1982.* Washington, D.C.

Literature for Researchers

Darrel Clowes, Editor

Literacy in the Open-Access College

by Richard C. Richardson, Jr., Elizabeth C. Fisk and Morris A. Okum, San Francisco: Jossey-Bass, 1983

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Dick Richardson and his associates in their **Literacy in the Open-Access College** raise a number of critical questions about community college education that are of particular relevance to those of us involved in curriculum reform. Based on a three year ethnographic study of a typical college within a large, multi-campus community college system, given the pseudonym "Oakwood," their analysis raises issues of the broadest concern. For they demonstrate that community colleges have lost their way in the sense that they are unable to articulate a clear sense of mission and to relate that vision to organizational structure and curriculum.

Like all fine ethnographies, their work offers important insights by providing novel perspectives on seemingly familiar settings. The "shock of recognition" that Richardson and his colleagues produce is achieved through a focus on the role of literacy in the curriculum and the way in which students are shaped and prepared for future academic and occupational careers. Pointing to the traditional role of written language in the intellectual formation of students, they assert that as these forms of language usage have dropped away no new equivalent form of communication has been substituted in the curriculum.

This point is forcefully made in their argument that if we are to offer our students realistic hopes for a decent future in the emerging economy, if we are to prepare them to compete effectively for professional, managerial or technical jobs, then they will have to acquire the ability to critically and expressively utilize language. However, the fundamental conclusion of their analysis is that community colleges, in the most basic ways that they structure their curriculum and administrative activities, prohibit the cultivation of these skills. The community college, in Richardson et al's term, is structured to promote "bitting" defined as the use of reading and writing to understand or produce fragmented language when the student is pre-

sented with specific external cues. This they contrast with "texting," understood as the use of reading and writing to comprehend or compose connected language.

What is perhaps most useful for those of us engaged in designing new programs for students is their attempt to describe the very nature of the contemporary community college. For what emerges from their study is a much clearer sense of how the ways in which students and teachers experience the college at the classroom level are related to what the college as an organization is designed to accomplish.

A college structured to promote "bitting" will inevitably produce certain types of students: students with restricted literacy skills and socialized to conceive education as a series of experiences in which they are to memorize discrete bits of information. Such a college is conceived as a bureaucratic machine dedicated to the continual rationalization of the educational process, and utilizing an educational technology most powerfully signalled by the insistence on the jargon of behavioral objectives which break student transformations into ever more discrete pieces. The power of the analysis derives from the perception that program change must be a revision in perceptions of institutional mission.

The book is most provocative in the number of "stories" that are told in the attempt to understand how these norms of literate activity come to be established. One narrative traces the nature of classroom behavior to broad policy decisions at the district level and the manner in which these policies were translated into specific organizational goals at individual campuses. Once a decision was made to expand enrollment, the number of underprepared students entering the college placed great stress on the existing curriculum and services. Attempts to reduce costs through a greater reliance on part-time faculty reduced control over the curriculum. This story ends in faculty members reducing their demands on students rather than in requiring them to improve their skills.

This plot line intersects with a second narrative which more fully relates classroom practices to the ongoing negotiations that take place between faculty and students. This story is told primarily through a focus on the relationship between instructional styles and methods and the learning strategies of students. The rich complexity of actual behavior is simplified through a series of typologies that the authors construct, but the main outline of the story emerges nonetheless.

Students, whose "motivational orientations" are characterized as largely that of "requirement meeters" and "specific on non-specific information users," enroll in courses taught primarily by faculty whose pedagogical objectives are the limited cognitive objectives of information dissemination. As the average level of academic preparedness and the interest of students declines, the faculty, committed to the classroom lecture and the limited instructional goal of "information transfer," respond by simply watering down the requirements. They both "transfer" less complex information to the students via lectures and demand much less literate behavior from the students by replacing term papers and essays with check marks on multiple-choice exams. The consequences for the institution are that the norms of literate activity are renegotiated downward, ultimately altering the entire intellectual climate of the school.

In startling contrast to the prejudices of the traditional academic faculty, we find the most praised and indeed the most amiable characters in the

story in the basic language skills courses and the vocational labs. These seemingly dissimilar segments of the curriculum turn out alike in an important way. In both cases the norms of literate activity have been renegotiated as students and teachers are brought closer together in an attempt to achieve identifiable and generally shared goals. Since both faculty and students are generally committed to the same ends, there is added motivation to demand more of each other and to find ways to teach and learn effectively.

Set against the larger narrative of the construction of a bureaucratic machine designed to break learning down into "bite size" components that are easily memorized and repeated, the close contact and shared activity of students and teachers in the basic skills and vocational lab courses becomes quite appealing. This example also raises the broader issue of how classroom norms can be renegotiated throughout the entire institution.

When Richardson and his colleagues turn to the question of institutional change, they pose the policy alternatives in stark terms illustrated in the table taken from their book. As one can see, the commitment to either "bitting" or "texting" leads to quite different institutions. We find the formulation valuable for sharpening debate, but take exception to it on several points.

One is that although their major concern is with the norms of literate behavior that are institutionalized in classroom practices, the instrument for influencing such norms is exclusively administrative policies and procedures. This is a somewhat curious conclusion, but it can be better understood when it is related to their analysis of the community college.

While there are several different stories of "Oakwood's" transformation, the major narrative is an institutional and administrative one. The administrative priority that the new chancellor placed on access and growth was quickly translated into institutional policies which greatly expanded the number of non-traditional students. However, this policy shift occurred without a concomitant attempt to alter the curriculum or to redefine program standards or the types of support services most needed by those students. Since Richardson et al's view the decline in literacy as resulting from administrative decisions, the suggested policy alternatives are framed in similar terms. But the question still remains as to whether the educational practices embedded in the average class can be so clearly traced to specific institutional policies. Or, put another way, are policies and procedures, as important as they are, the only way administrators and faculty can communicate about educational goals?

A second related concern is the restrictive nature of the "texting" alternative. As an examination of the table shows, "texting" is primarily achieved through a more selective admissions and program eligibility policy. Although Richardson and his group are quite sensitive to the role of access in the community college mission, they suggest the need to shift toward restriction in a time of shrinking public resources.

This stark formulation of the policy alternatives must also be related to the details of their analysis. As their historical sketch of the college and district shows, the chancellor's new priorities never gained the commitment of the faculty. While the senior administration promoted innovation and the attraction of new clientele, the faculty retained their primary commitment to traditional students and traditional methods. This lack of agree-

Promoting Critical Literacy: Policy Alternatives

Policy Area	"Bitting" Less Use of Critical Literacy	"Texting" More Use of Critical Literacy
Admission and Placement	Recruit actively. Seek new clientele. Admit all who apply, with enrollment permitted in any course for which there is no quota (for example, nursing).	Recruit selectively. Admit all who apply with high school equivalency, with enrollment limited to courses that match student reading, writing, and math skills.
Financial Assistance	Keep all students eligible for as much assistance as possible for as long as possible through credit for basic skills, liberal interpretation of regulations, and easy withdrawal policies.	Limit eligibility to students making defined progress toward a degree or certificate according to some acceptable time frame.
Educational Program	Design program to offer "all things to all people." Seek to emphasize community rather than college. Avoid setting priorities.	Limit to programs and courses that can be offered at a defined level of quality within the limits of existing or probable resources. Emphasize degree-oriented - occupational or transfer programs.
Course Designations	Label courses to maximize funding potential. Place burden on transfer institutions and state agencies to disprove course status.	Label courses according to the objectives and academic experience of those for whom they are designed.
Program for Remediation	Emphasize courses and services described as developmental and administered by a separate unit. Include goals such as socialization having equal status with the remediation of academic deficiencies.	Emphasize remedial courses in academic skill areas administered by related departments. May include support services such as tutoring and study skills courses.
Promotion of Academic Progress	Facilitate continuing enrollment by liberal withdrawal regulations and non-punitive grading. Define achievement as grade-point average for courses completed and surveys of student satisfaction, as well as reports on selected individuals.	Require students to qualify for regular status in a degree or certificate program within some limited and specific period of time. Require defined progress toward achieving educational objectives. Define achievements as completion of defined sequence with minimum grade-point average in required courses. Use standardized or teacher developed examinations of academic achievement.
Faculty Conditions	Use part-time instructors extensively as a strategy for expanding services despite resource constraints. The ratio of full-time faculty to students justifies neglect of advisement and orientation procedures.	Limit use of part-time instructors to the coverage of enrollment fluctuations or where necessary skills cannot be obtained in a full-time faculty member. Full-time instructors expected to provide sound student advisement.

ment both undermined administrative authority and eroded faculty morale while stymieing attempts to develop effective working relationships.

The policy alternatives associated with "bitting" and "texting" can be seen as shaped in part by the varying perspectives of senior administrators and faculty members. Bitting, in its most fully developed form, implies an institution completely dedicated to growth, access and the most efficient allocation of resources. Texting is closer to the faculty desire to sustain some of the traditional ideals of the liberal arts and concern that the institution recruit the type of students they are most prepared to teach. Seen in this way, the choice between bitting and texting is another expression of the fact that community colleges have lost their way and require a new educational vision which can be expressed in their curriculum and organizational structure.

Richardson's analysis has already generated both admiration and controversy, expecially in its questioning of the long standing tacit assumption that administrative and policy decisions are mostly neutral to the actual classroom experience of teachers and students. Still, one might reasonably ask how strong the relation they have uncovered really is, whether the correlations chart causes or whether those correlations themselves reveal deeper cultural influences. To sharpen that question just a bit, why should it be, for instance, that the rationalization of the curriculum should be even imaginable as a mere collection of discrete, self-contained and largely self-legitimated three credit courses? Why should student/teacher negotiations have taken the form of movement away from literacy and toward memorization? Why should even literacy be spoken of as a set of skills culminating at the highest level in the ability to "analyze" (break into bits) and/or "synthesize" (build out of bits)? We believe that the answer to these questions can only be that the educational establishment is deeply committed to the largely unarticulated view that education consists primarily in the acquiring of knowledge and that knowledge is best understood as information. The prevalence of that standard epistemology is exhibited in Richardson's typologies of both student motivation and teaching styles, each of which lines up primarily with respect to questions of the utility of information. We suggest, then, that a deeper understanding of what drives curricula down the "bitting" path would include an ethnography of knowledge, and analysis of how we as a culture have come to represent education to ourselves and how that conception becomes embedded in our institutions.

Associated with the reading of knowledge as information, for instance, is the fairly standard opposition of knowledge with values or attitudes. That dichotomy, however, proves to be a blunt instrument with which to understand the rich differences the team uncovered between the regular academic program, the vocational programs and the developmental courses. The standard typology forces the analysis to be run in terms of the intersection of faculty and student goals whereas the mere description of the program activities seems to suggest much more strongly that the practices of the classroom or the shop form students as practitioners or as citizens. The implications for the academic classroom are devastating. If, as the positivists insist, knowledge and values occupy conceptually separate realms, the pretence that classroom and other educational activities are designed to deal with knowledge and are "value neutral" forces us into a conundrum. We must take students who are unformed by aca-

demic standards, who have never learned the standard set of academic norms, attitudes, and behaviors, and insist that that fact about them doesn't matter since, after all, knowledge and the method of acquiring knowledge are neutral with respect to the cultural ensemble.

Literacy in the Open-Access College is probably the community college book of the eighties; it will provide the terms of the conversation in which policy issues will be discussed for the next several years. Aside from the explicit policy forks it presents, practitioners at all levels within community colleges will find dark implications for their enterprise. But they will also find a vocabulary with which to express the crises and a theoretical framework in which to couch the burgeoning twin movement for staff development and curriculum reform—wherein lies the hope we have of keeping alive the dream of the democratization of higher education.

Public Policy and College Management: Title III of the Higher Education Act

by Edward P. St. John
New York: Praeger Publishers, 1981

Reviewed by William Robbins
Associate Professor, Virginia Institute of Technology

Enhancing the financial integrity of American colleges through effective management practices is the idea behind Edward P. St. John's study, **Public Policy and College Management**. However, the subtitle suggests that the reader will find here an analysis of the federal government's well-known developing institution program, begun in the 1960s. Praise is due St. John for a study rich with ideas, many will be disappointed if they expect to find in this study, coming out of a great university base as it does, a balanced, probing, long-awaited analysis of Title III, the major attempt by the federal government to help colleges in trouble.

As a graduate student at Harvard, St. John was fortunate to work with George B. Weatherby before the latter's move to Indiana's Commission for Higher Education. St. John was uniquely able to pyramid his doctoral work into a study of national importance. Weatherby was then directing a Harvard research team looking for new management concepts that would enable higher education leaders to replace their out-dated growth model. Much hope had been placed on foundation and governmental "external" interventions. But how appropriate was the prevailing mind-set that some of the newer sophisticated management techniques would provide the answer to managerial and financial weakness? This early Harvard study justified a further USOE grant that called for St. John to analyze the impacts of Title III and to formulate a set of concepts that would undergird a management intervention model for institutions regularly confronting rapid unsettling change and sometimes direct threats to their very survival.

St. John's study merits careful attention by higher education policy makers and practitioners. Noteworthy in his framework of ideas are principles that challenge current assumptions. The following couple of paragraphs summarize all-too-briefly much of this material.

Colleges require individually-designed management programs geared to the college's size, structure and history and based on an identified

stage of structural development. Not necessarily needed are those sophisticated techniques, such as PME, MIS, TIS, and all their kin, zealously pressed on colleges by the experts. Rather, the various plateaus or stages of development require different approaches, including qualitative ones whose championing will require educational leadership of a high order, not simply administrative competence. Just as Balderston (1974) had referred to management levels of survival, stability, and excellence, so St. John identified four levels: (1) the low-range college obsessed with survival; (2) the medium-range college making uneven progress toward financial and educational goals; (3) the high-range college making steady progress; and (4) the distinctive college so able to plan and manage its resources as to have the capacity for excellence. The management development concepts proposed by St. John have one overriding purpose—"to enhance the capacity of institutions to meet their basic organizational needs and to improve qualitatively" (p. 206).

Quantitative indicators (number of students, faculty, library volumes, size of budget, of physical resources, or external support) may be useful for certain purposes (even in getting a Title III grant!), but only through historical examination can the researcher identify the structural developmental phases of the college, which would then suggest the general type of management and information system needed. Only from qualitative institutional improvement will the college build a sound basis of long-term strength and growth, achieved not through some noted system's "quick fix," but through the development of the basic thinking and analytic capacity of its leadership.

Unfortunately, this study disregards the essential historic mission of Title III, to strengthen "developing institutions," those that the legislation stated were cut off from the "academic mainstream." There were so many colleges clearly in this category—most of the black, the small and rural, the big urban but chaotic ones, the recently-established but poorly or shabbily operated ones. An affluent nation, determined to use its resources for social gain, sought by this 1965 legislation to match the immense college enrollment increases with institutional improvement. However, St. John collected his data from five carefully-selected "exemplary" institutions which had received heavy funding under the Advanced Institutional Development Program. (The selection was made by USOE staff, although he may have had a part in it.) Granted the five colleges are not the rich and prestigious of the land, but neither would they satisfy the original legislative intent behind the act. These five colleges, picked somewhat subjectively, were Doane College (Nebraska), St. Mary's Junior College (Minnesota), Xavier University (Louisiana), North Carolina Agricultural and Technical State University, and Valencia Community College (Florida). Any college, of course, can be considered as legally "developing," thus pointing to a definitional problem which tormented USOE year after year in trying to administer the law. Only the "academic mainstream" concept could be used for selective purposes.

St. John argues that by selecting exemplary, rather than weak, institutions for his study, the relationship between structural development and management effectiveness can best be analyzed. "If it can be assumed that the selected institutions do have effective management systems . . .then it is possible to examine the relationship between structural characteristics and the appropriateness of different management practices"

(p. 3, 4). This case study data of solely exemplary institutions are appropriate for exploring the management-oriented concepts described by St. John. However, they seem clearly inappropriate for looking at the impacts of the federal government's Title III intervention program, and even belie the use of the book's subtitle, "Title III of the Higher Education Act." St. John's strong emphasis on the value of qualitative development, especially in the way the program's impact affects students and communities, is not consistent with the fairly simplistic view of those legislators who finally succeeded with their attacks on Title III. They kept pounding away with the argument that the government was always "developing" weak colleges without turning them into "developed" colleges, so program help was not justified! Badly needed, and not yet met by existing research, are outcomes studies of what actually happened to the hundreds of out-of-the-mainstream colleges that were helped in the 1960s and 1970s as a result of Title III. Those consultants who participated with colleges that "no one ever head of" in such management-development efforts (this reviewer was one such) can point to evidence of major strengthening through improved managerial planning and programming capability. This story in American higher education is yet to be written.

Many readers will be intrigued with the way St. John turns to adult development theory to support his framework of management development ideas. The management development plateaus that he identifies, based on college management needs varying according to institutional size, structure and history, are analogous to an individual's biological, cognitive and personality development. Thus, St. John notes the use of stages by Piaget, Loevinger, Kohlberg, Maslow and Erikson (but why did he have to misspell Loevinger and Erikson?). In addition, the emphasis on qualitative factors permits St. John to emphasize humanistically that one must consider the full range of college development, rather than just financial, enrollment and productivity data. Thus he would agree enthusiastically with Thomas R. Harvey and Clifford T. Steward (1975), who stressed that institutional survival alone is inadequate without the sense of *significant* survival.

The times are difficult; they are "a-changing." Significant survival implies that college leaders will be continously engaged in planning, managing and evaluating activities toward both quantitative and qualitative goals that will enable them to foresee and to lay appropriate groundwork for all the new developments ahead. A careful review of St. John's study should help them do that.

References

Balderston, F.E. *Managing Today's University*. San Francisco: Jossey-Bass, 1974.

Stewart, C.T. and Harvey, T.R. (eds.). *Strategies for Significant Survival*. New Directions for Higher Education, No. 12. San Francisco: Jossey-Bass, 1975.

AN ERIC REPORT:
Community College Transfer Students

by Jim Palmer

Increased national attention on the quality of education has resulted in a more critical examination of the community college transfer function. This concern has emerged not only in the professional literature but in the popular literature as well. ***Time*** magazine (19 September 1983), for example, reports the 20-year decline in the percentage of community college students who plan to transfer, and notes that "Educators and public officials are now trying to work out ways to get community colleges back to their basics." After years of growth, during which colleges championed a comprehensive curriculum, the original transfer function of the colleges has reemerged as a primary determinant of community college quality.

In response to these concerns, community college researchers have conducted several studies to identify potential transfer students and to assess their academic progress. The following citations represent a selection of the ERIC documents describing these studies. The full text of these and other ERIC documents can be ordered through the ERIC Document Reproduction Service (EDRS) in Arlington, Virginia, or can be obtained on microfiche at over 670 libraries across the country. Please write the Clearinghouse for an EDRS order form and/or a list of the libraries in your state that have ERIC microfiche collections.

Bragg, A.K.

Fall 1979 Transfer Study. Report 3: Second Year Persistence and Achievement.

Springfield, IL: Illinois Community College Board, 1982, 20 pp. (ED 230, 228).

A five-year follow-up study is being conducted of 10,015 students who transferred from Illinois two-year colleges to 42 senior institutions in the state in fall 1979. An analysis of the persistence and achievement rates of the transfer students during their second year after transfer (1980-81) revealed: (1) 71% of the Associate in Arts (A.A.)/Associate in Science (A.S.) degree recipients, 56% of the Associate in Applied Science (A.A.S.) degree recipients, and 57% of the students who transferred without a degree completed the spring 1981 term or earned their baccalaureate prior to it; (2) 31% of the A.A./A.S. degree holders, 19% of the A.A.S. degree recipients, and 11% of those without an associate degree earned their baccalaureate by the end of the second year after transfer; (3) the

collective grade point average (GPA) for spring 1981 was 3.01 for A.A./A.S. recipients, 2.99 for A.A.S. degree holders, and 2.82 for non-associate degree holders; (4) while GPA's for all three groups were higher at the two-year institution than at the senior institution, GPAs, rose each quarter at the transfer institution; (5) of the students who earned their baccalaureate degrees within two years after transfer, 26% obtained degrees in business, 17% in social and behavioral sciences, and 13% in education; and (6) approximately 8% of the transfer students changed majors from one broad program category to another.

Renekiewicz, N.K., and others.

The Reverse Transfer Student: An Emerging Population. Preliminary Draft; Field Review Edition.

Sacramento, CA: Los Rios Community College District and the Northern California Community Colleges Research Group, 1982. 73 pp. (ED 223, 308).

As part of a statewide investigation of the reverse transfer student, a study of students transferring from four-year colleges and universities to community colleges was conducted in the Los Rios Community College District. The study sought to determine the relative size of the reverse transfer population; differences in the characteristics of reverse transfers and other students; and reasons students left the four-year colleges or transferred laterally from one community college to another. Questionnaires were sent to 11,210 students at the three Los Rios colleges, requesting information on background, enrollment influences, educational attainment and plans, and prior college attendance. Based on responses from 10,196 students, or 22% of the total district student population, the study revealed that: (1) 19.6% of the respondents were reverse transfer students, including both four-year college graduates and non-completers; 25.7% had previously attended a community college; and 54.7% had no prior college experience; (2) 82.4% of the four-year college graduates and 69.6% of the first-time students were employed; (3) 11.7% of the four-year college graduates and 56% of the first-time students were enrolled for 12 units or more; and (4) four-year non-completers left the four-year college mainly for financial reasons or due to uncertainty about their major, while two-year lateral transfers left their previous college primarily because of a change in job or residence. A literature review and the survey instrument are included.

Report on Remedial Education.

Springfield, IL: Illinois Community College Board, 1983. 19 pp. (ED 230, 220).

As part of the review of policies and procedures regarding post-secondary remedial education, the Illinois Community College Board (ICCB) administered two surveys in fall 1982. The first survey sampled 10% of the students who had transferred to the state's public universities from a community college in fall 1979 to determine why transfer students from community colleges might be required to take remedial coursework at the universities. The second study, a survey of 52 Illinois community colleges, sought to assess the effectiveness of the colleges' methods of identifying

students in need of remedial coursework; the success of students who enrolled in remedial courses; and the overall quality of the colleges' developmental programs. Findings from the surveys indicated that: (1) students who earned associate degrees prior to transfer did not require remedial education, but those who transferred before completing a degree often needed remediation; (2) the most common methods of identifying underprepared students were standardized and college-developed tests, instructor/counselor referral, and student self-referral; and (3) the main method of evaluating student progress in remedial courses was through pre-post testing, while the primary method of assessing program effectiveness was through student evaluations. The studies resulted in a revision of ICCB rules governing and defining remedial education.

The Role of Community Colleges in Preparing Students for Transfers to Four-Year Colleges and Universities: The Maryland Experience.

Annapolis: Maryland State Department of Education, 1983. 27 pp. (ED 230, 255).

This study report summarizes the results of six follow-up surveys of Maryland community college students conducted between 1976 and 1982 to assess the success of the state's community colleges in preparing students for transfer to four-year institutions. After an introductory discussion of the transfer function of community colleges and the data sources of the study, information is provided on the number of Maryland community college students enrolled in transfer programs; the proportion of students entering community colleges with the goal of transferring to four-year colleges and the proportion achieving this goal; the characteristics of transfer students; students' satisfaction with their preparation for transfer; the efficiency of the transfer process; student success after transfer; and the colleges to which community college students transferred. Highlights from the surveys included: (1) in fall 1982, 46% of the state's community college students were enrolled in transfer programs; (2) since 1974, approximately one-third of all community college students had reported that their main goal was to transfer; (3) 40% of all 1978 graduates and 42% of all 1980 graduates transferred to a four-year college; (4) students who transferred were younger, completed more credit hours, and had a higher grade point average than those who had not transferred; and (5) more than 88% of the students surveyed reported satisfaction with their preparation to transfer.

Smith, K.M.

"Student Achievement and Open Admissions: Do Student Outcomes Fulfill the Promise of the Open Door?"

Paper presented at the Annual Convention of the American Association of Community and Junior Colleges, New Orleans, LA, April 24-27, 1983. 27 pp. (ED 231, 418).

A study of students who transferred from a community college in Michigan to two senior institutions in the state between 1973 and 1979 was conducted in order to determine why students attended a community college;

the point at which they decided to obtain a baccalaureate degree; and their experiences after transfer. The study also sought to relate students' background characteristics and the factors influencing their college choices to their academic experiences at the four-year college and their educational outcomes. Study findings, based on survey responses from 362 students, included the following: (1) the major reasons for attending the community college were convenient location, low cost, ability to work while attending classes, and flexibility of course times; (2) the major reason students transferred to the state regional university was that it allowed them to integrate their studies with work and family obligations, while students transferred to the major research university because of the prestige of the institution and the reputation of their academic programs of study; (3) respondents from families that were better educated and of a higher socioeconomic status were more likely to choose the major research university and to successfully obtain a bachelor's degree; and (4) a greater percentage of students who transferred prior to obtaining an associate degree attained a bachelor's degree than those who transferred with an associate degree.

Transfer Activity of Minnesota Undergraduate Students, Academic Year 1980-81.

St. Paul: Minnesota Higher Education Coordinating Board, 1982. 77 pp. (ED 221, 236).

A series of data tables illustrates the 1980-81 movement of undergraduates among Minnesota's post-secondary institutions and educational systems (i.e., its state university system, community colleges, area vocational-technical institutes, the University of Minnesota, proprietary schools, and private two- and four-year colleges), as well as movement between other states and Minnesota. Statistics are provided for system-to-system transfers for 1979-80 and 1980-81; system-to-institution transfers; institution-to-system transfers; and system-to-system transfers by sex and class level. An introductory section highlights findings, including the following: (1) the total number of 1980-81 transfers was 26,690, a 13% increase over 1979-80; (2) women made up 51.8% of new undergraduate transfers and constituted 50.2% of all undergraduates; (3) vocational students accounted for 25% of all undergraduate transfers; (4) the number of transfer students admitted increased in the public systems and decreased in the private two- and four-year colleges from 1979-80 to 1980-81; (5) among interstate transfers, more students entered and left the community college system than any other system; (6) of the transfers to community colleges, 24% had attended the University of Minnesota and 23% another community college; (7) of the transfers from community colleges, 31% entered a public state university and 26% entered the University of Minnesota; and 20.9% of the transfer students came from out of state.

Update of Community College Transfer Student Statistics, Fall 1982. Commission Report 83-11.

Sacramento: California State Post-Secondary Education Commission, 1983. 42 pp. (ED 230, 257).

For five consecutive years, studies have been conducted of the flow of transfer students from the California community colleges to the University

of California (UC) and the California State University (CSU). The studies have focused on trends in numbers of transfers; transfers to the UC and CSU campuses; the colleges of origin of transfer students; the sex and ethnicity of transfers; and transfer students' majors. The study of fall 1982 transfers, contrasted with findings from previous years, indicated: (1) the number of community college transfers to the UC system increased by 7.5% between fall 1981 and 1982, while transfers to the CSU system decreased by 0.7%; (2) the percentage of Asians, Chicanos, and Filipinos transferring increased between 1980 and 1982, while the percentage of Blacks transferring decreased between 1981 and 1982, after an increase between 1980 and 1982; (3) the percentages of Blacks and Chicanos in the transfer student population were significantly smaller than the percentages in the community college freshman population; (4) for women transferring to the UC system, the most popular majors were in social sciences, biological sciences, and interdisciplinary studies while business and management majors were most common among women transferring to CSU; and (5) engineering enrolled the largest number of male community college transfer students to UC and the second largest number to CSU. The study report includes detailed information on Black, Chicano, and Asian transfers.

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Recognition Awards: Outstanding Journal Contribution

The outstanding journal contribution award is one of the five recognition awards established by the Executive Board of the National Council for Research and Planning. It is awarded to the author of the research-based or policy discussion article as selected by the Editorial Board of **The Community College Journal for Research and Planning.**

The *1984 Award* was presented to *Richard G. Dumont,* Professor of Sociology and Chairman of the Department of Sociology and Philosophy at Tennessee Technical University, Cookville, Tennessee and *James T. Jones,* Research Assistant, Department of Educational Psychology, Tennessee Technological University, Cookville, Tennessee for their article on "Discriminat Analysis Applied to Basic Skills Programs." Published in the Fall/Winter 1983, Volume III, Number 2 issue of the Journal.

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PURPOSE

The COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING provides a forum for the exchange of information among members of the association and among professional colleagues in the field of research and planning. The Journal is multi-purpose and diverse in its articles and information; however, it is unified in its purpose to be of service to professionals working in the field of Community College research, management and planning.

The Journal is designed to provide an outlet for research and planners. It also serves as an information source for all elements of higher education interested in institutional management. The Journal meets a need to communicate the findings and achievements of research and planning professionals concerned with issues of concern to community colleges.

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COMMUNITY COLLEGE JOURNAL
FOR RESEARCH AND PLANNING

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Community College Journal for Research and Planning

PRESIDENT'S FORUM:

NEEDS ASSESSMENT AND INSTITUTIONAL VITALITY

Adelbert J. Purga

One of the key elements in institutionally based financial decisions relates to the significance of curricular decisions. Program evaluation can provide financial decision makers with information related to internal and external variables that relate to a program's health. The research function can aid in the collection, synthesis, and interpretation of many varied types of information. Even though internal program information (i.e. enrollment and cost effectiveness) is vital to our financial decision making, we cannot overlook the significance of external data.

The viability of successful program evaluation is contingent upon useful, current information from the marketplace. This data often provided through a needs assessment process will aid the institutional decision makers in determining if an existing program should be continued, deleted, or modified. It will also provide insight as to what emerging curricula areas the institution may wish to activate.

Community needs assessment can be an expensive undertaking, especially if outside consultants are contracted to implement the process. Many successful needs assessments have been fully implemented utilizing an institution's own staff and resources, thus keeping the cost to a minimum. One of the benefits of conducting one's own needs assessment is the involvement of the staff in the process, rather than only the outcomes of a needs assessment activity. As we focus on the development of institutional cyclic planning processes, needs assessment will provide us with information that will allow congruence between the needed services of the college's clientele and the college's offering and aid in the development of appropriate and timely institutional goals. By using needs assessment as a two-way communication channel between the constituency and the institution, we will find ourselves in a better position to interpret employment information and thus align our services and offerings more accurately. The needs assessment information that follows focuses on the typical techniques of data collection, typical community target groups (constituencies), the typical data collection technique used for each target group, and a set of recommended procedures for conducting a needs assessment. Five commonly used techniques for data collection are the survey, social indicators, key informant, community forum, and rates-under-treatment approaches (Warheit, et al, 1975).

The two most frequently used types of data collection are the survey and the social indicators approach. The social indicators approach allows us to draw inferences of need from descriptive data such as U.S. census, federal, state, local, and agency reports. The social indicators technique should be conducted prior to any other technique so that the researcher may develop needs assessment analysis goals and hypothesize potential conclusions. The survey technique involves the collection of data from a sample of an entire population. The most common methods of the survey technique are personal interviews, telephone interviews, and mail questionnaires. If conducted with properly developed and tested methods, the survey technique can be the most scientifically valid method of evaluating programs or determining needs.

The third type of data collection technique is the key informant approach. This approach utilizes individuals who are most aware of constituency needs. As the name implies, the key informant approach is most often used by utilizing personal interviews or telephone interviews. This particular approach may also be altered so that the key informants are used in the fourth type of data collection, the community forum. In the community forum individuals are invited to participate in a large meeting with the goal being to identify the needs of the service area. Not only does the community forum allow the communication of service area needs, it is a viable technique for enhancing the involvement of key community individuals.

The fifth type of data collection is rates-under-treatment. In this approach, we typically monitor the rates of various agencies and institutions within our service area to determine the health of those institutions. A classic example is the census patterns within the hospitals, nursing homes, and other health agencies so that we may better understand the potential need for a nursing or allied health program. If the institution's census has been decreasing and is at a currently low level we may in fact have valid inference that the potential employment of our college's graduates in the health area may be minimal.

More often than not, we do not use one type of data collection method for any one target group. Rather, most needs assessments are conducted by utilizing a combination of these data collection methods for each target group. As was previously mentioned, it is important to conduct the social indicators analysis prior to initiating any of the other four types of data collection. This method will allow us to establish a foundation of knowledge so that we may more accurately use our other data collection techniques to seek answers to specific inferences or hypotheses.

Constituency group or target group refers to the homogenous groupings of clientele that may benefit from institutional services. Once constituency groups are identified, participation should be sought from representatives from that constituency group to participate in the needs assessment activitiy. When communication

channels between various constituency groups and the institution are utilized, the market data collected will contribute to the strategic planning efforts in insuring the meeting of the clientele needs and goals. The following represents a typical list of suggested constituency groups for a community college. (This list is not to be viewed as all inclusive): business/industry, government agencies, high school, human services, minority groups, senior citizens, service or civic organizations, and present students. The following represents suggested data collection methods for each of the above mentioned target groups: Business/Industry--key informant; government agencies--key informant and rates-under-treatment; high school--survey; human services--key informant, rates-under-treatment, and survey; minority groups--key informant, social indicators, and survey; senior citizens--key informant, social indicators, and survey; present students--survey; service or civic organizations--key informant, rates-under-treatment, and survey.

Successful needs assessments have been conducted by institutions utilizing their own staff and resources by adhering to the following steps.

1. A needs assessment committee should be established within the institution with the purpose of identifying constituency groups.

2. The needs assessment committee then publishes the list of constituency groups throughout the organization for validation. If deemed necessary, this process can be repeated using the Delphi technique until general concensus is achieved.

3. Once constituency group validation is achieved, the needs assessment committee selects representatives for a community forum. Each constituency group representative, typically a key informant with expertise pertaining to the constituency group, is asked to participate in the process.

4. When the community forum is convened, each constituency grouping of representatives forms a subcommittee, with the main purpose of the subcommittee being to recommend the appropriate method for data collection and perhaps a proposal as to what accomplishments are expected.

5. The office of institutional research or some other representatives of the institution then proceed in the data collection process relating to each target group.

6. Once the data collection methods have been implemented, the office of institutional research then analyzes and synthesizes the information and prepares it for analysis by a reconvened community forum.

7. The community forum is then reconvened and recommendations based on the report from the institutional research office are then prepared for the institution's key decision makers.

Once the original community needs assessment has been conducted, we have set the scene for cyclic needs assessment. Each year the listing of constituency groups should be validated and each year the institution should assess a portion of the constituency groups. In this manner, we may easily establish a three-year cyclic pattern for our needs assessment process. Under this model we will be communicating with each constituency group once every three years allowing us timely information so that we may make informed decisions regarding our curricula.

In this forum, I have tried to focus on the critical nature of informed decision making, particularly as it related to institutional vitality. Only by a clear understanding of the needs of the community can a community college allocate its resources in an appropriate and effective manner to enable accomplishment of its mission. Since a majority of an institution's resources are allocated to curricular offerings, program evaluation becomes a vital link in determining value of existing programs as well as the emerging needs for new programs. This has necessitated a new dimension for institutional research--needs assessment. We must be in a position to incorporate information about the institution's clientele and the institution itself into delivery systems, operational strategies, and strategic planning. Needs assessment, or market research, is a communications process between the service area and the institution.

Warheit, G.J., Bell, R.A., and Schwab, J.J. Planning for change: Needs assessment approaches, National Institute of Health Grant - 15900-050S1, 1975.

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

PLANNING FOR CHANGE: ASSESSING INTERNAL AND EXTERNAL ENVIRONMENTAL FACTORS

Janis Cox Coffey

> *"I sometimes wonder as I look ahead into the 1980s just what developments we do not now foresee and just how accurate is our competence today to anticipate tomorrow. We have no choice as educational planners except to do the best we can to prepare for change. But we should never forget that the best made plans of men may be upset by knowledge we don't have, by the events we cannot foresee, and by the unexpected demands which suddenly appear. Planning remains an art, not a science. Planning is more the ability to cope with change than it is the power to foresee change."*
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> *- John D. Millett, 1979*

INTRODUCTION

John D. Millet's observations on the inability of planners to accurately project the future is perhaps more true for community colleges--particularly in California--than for any other segment of higher education. Unlike the state colleges and research universities, the California community colleges saw their mission and functions broaden and expand during the twenty years following the Legislature's implementation of the 1960 Master Plan for California higher education to include areas unheard of in that plan. Courses and programs for older and retired persons; avenues of entrance for "returning women"; avocational, recreational and leisure-time activities for community members; remedial courses for recent immigrants with English as a second language; and courses and programs to fit the desires of the "non-traditional, lifelong learning" clientele all became part of the community college's mission. This broadening of mission and function often came at the behest of various publics through the State Legislature, and was blessed with increasing proportions of local and state funds. By the mid-1970s, the trend lines were all up for the community colleges, with increasing enrollments, varied student clienteles, and a broad commitment to expanding access.

California's community colleges were not alone in this vision of the future. In 1977, Change magazine published The Third Century, in which twenty-six prominent Americans speculated on the future of education in the United States. Two major themes echoed throughout

the essays: lifelong learning and equality--the continuing extension of access to those who for whatever reason had not participated in higher education. Both these themes had figured prominently in the development and broadening of the mission of community colleges nationwide, and many felt that this recognition of the appropriate expansion of all of higher education into the areas of lifelong learning and equality of access was a harbinger of things to come.

What was not foreseen in California--and indeed, in several other states--was a growing resentment on the part of taxpayers regarding funding of an ever-expanding role for government and public institutions. The advent of Proposition 13 in California in 1978 sparked similar legislation to curtail government spending in other states, and began a dramatic reassessment of what the public was willing to pay for in all areas of educational and social programs. For the California community colleges this unforeseen event had dramatic results: a sudden shift from local to state support, with the attendant request for statewide accountability as to how the newly allocated dollars were spent. No longer could community colleges offer anything their local constituencies desired; statewide priorities had to be addressed and "frivolous courses" discontinued. The sudden loss in 1982-83 of $30 million in funding for certain types of courses marked the first time the state--and not local boards of trustees--would determine what was and was not worthwhile (or at least worth state expenditures) in the curriculum of local community colleges.

The final fiscal event which could perhaps have been foreseen as early as 1980 but which many believed would never happen, was the advent in 1984 of tuition in California's community colleges. While California had long prided itself on having a "tuition-free" system of higher education, student charges at the University and State University had in fact been increasing dramatically after Proposition 13 to a point where the distinction between "tuition" and "fees" was a semantic one at best. Broadly-based criticism that the Legislature was "balancing the State Budget on the backs of students" finally resulted in 1984 student fees being reduced at the University and State University, while students in the community colleges statewide paid a new $50 per semester fee for full-time students, with $5 per unit for five units or less.

In addition to the imposition of statewide tuition, the community colleges have been faced with mounting criticism of their very mission and function. Amidst public charges that the colleges should not be "all things to all people", and legislative demands from many different interest groups for various types of reforms, the California Legislature established a "blue ribbon" public Commission for the Review of the California Master Plan for Higher Education, which is now examining the issues of mission, funding, governance, accountability, and access in California's community colleges. The "Master Plan Commission" as it is called, will report to a special Joint Committee of the Legislature in February 1986 with its

recommendations for the future of this key segment of California's tripartite higher education system.

The shift from local to state funding, the state's "defunding" of certain courses, first-time ever tuition, and a review of their basic missions and functions--all are changes that could not be easily anticipated and which have not yet been fully assessed in their impact on California's community colleges. Yet while planners and researchers cannot predict, we can plan to accommodate change, or at least ameliorate its effects on our colleges, through careful assessment of those factors in the environment that influence educational needs and priorities.

The community colleges, along with the other segments of California postsecondary education, exist within the economic, political and social environment of the state, and must, therefore, respond to alterations in that environment. Various forces--both those external to the colleges and thus largely beyond their control, and those internal to the colleges themselves--are at work in the environment and are shaping the future with which we must be prepared to cope.

The external environmental forces influencing the community colleges can be divided into three not necessarily exclusive categories of factors: demographic factors; economic factors; and sociopolitical factors. The demographic factors include such predictable indicators as the actual and projected size of the state and community population, the changing age mix of the population, and its increasing ethnicity. Economic factors include statutory limits on government spending, state rather than local funding, the rate of inflation, the health of the economy, the state and local labor markets, and family and individual income levels. The sociopolitical factors include the academic preparation of entering students and the concomitant demand for remediation, variable political support for postsecondary education overall and the community colleges in particular, increased legislative involvement and control, demands for increased accountability and regulation, concerns about program quality and academic standards, and increased competition from other state priorities for public funds.

Those forces that are internal to the colleges themselves can largely be divided into two major categories--economic factors and sociopolitical factors. The internal forces are those over which the college or district has at least a modicum of control, although the ability of the institution to effect changes in the operation of these forces may be doubtful. The internal economic factors include enrollment-driven funding formulas, faculty and staff compensation and benefit costs, plant and maintenance costs, and the percentage of tenured vs. part-time faculty. The internal sociopolitical factors cover a wide range and include: collective bargaining; affirmative action; maintenance of program quality and academic standards; changing student interests and enrollment trends; and pressures for increased centralization vs. campus autonomy.

This paper provides an overview of both the external and internal environmental factors that will affect planning in the community colleges, and concludes with a section on the potential for planners and researchers to influence at least some of those factors at both the local and state levels. (A more detailed report [same title as this paper] focusing on the Los Rios colleges and on the comparison of each college's student population to that college's service area, with an analysis of the key demographic indicators of change, is available from the Los Rios district upon request.)

The role of environmental assessment in planning is to identify those factors that may affect the institution, to assess the favorable or unfavorable impacts of those factors, to develop alternative future scenarios, and to devise realistic strategies for meeting institutional goals and objectives in light of the environmental factors (Uhl, 1983). However, even the most complete assessment of environmental factors will not ensure perfect planning and decision-making; it can only help shift the odds in favor of better decisions. To paraphrase J. M. Utterback (who echoes Millett): the need to integrate intuition and creative judgments with researched trends and data still makes environmental assessment more an art than a science.

THE IMPACT OF ENVIRONMENTAL FACTORS

EXTERNAL FACTORS

An Aging Population

California's population is expected to continue to increase throughout the 1980s, due in part to the state's location in the "sunbelt" and to its widely diversified economy. Current projections indicate an overall increase of 4.2 million people by 1990, for a total population of 27,965,000 (Center for Continuing Study of the California Economy, 1981, p. 6). However, in terms of effects on postsecondary education in general, and the community colleges in particular, it is the age mix of the state's population, and not just its size, that is the more important factor. The age profile of the state's population will result in the following:

- The total college-age population of 18-24 year olds is projected to decline from a peak of 2.9 million in 1982 to a low of about 2.45 million in 1992.

- The young adult population of 25-34 year olds (the post-World War II children) will continue to grow until it is nearly double the size of the 18-24 year old population in the early 1990s.

- The older adult population (65 and above) will outnumber the college-age cohort by the mid-1980s for the first time since 1962.

  (California Postsecondary Education Commission, Report 81-26, 1981).

The aging of the state's population will have major effects on the community colleges, since the majority of adults attending colleges and universities enroll part-time, often in non-degree or non-credit offerings. Many of the students already in the community colleges are such adults, but they are not faced with an increasing variety of alternative educational opportunities through business, industry, labor union, government, and community programs. The concomitant decline in the proportion of 18-24 year olds will continue to affect the community colleges, since it is these younger students who are likely to enroll full-time and carry a higher credit load--thus generating more funding for the colleges--than the older student. The decline in the younger student population means that the colleges will have to enroll considerable numbers of the older, part-time students, or face decreases in funding.

A Majority of Minorities

The increasing number of minorities in California's population will make California the first ethnic minority state by the 1990s. This demographic factor has considerable import for postsecondary education in general since, except for Asians, minority students generally have a lower rate of persistence in high school, a lower eligibility rate for entrance to the University or State University systems, more needs for remediation, and more severe English language problems. The impact on community colleges is readily apparent: more of these students will continue to enter the community colleges as their primary gateway to postsecondary education and to advancement in work and society. In addition, those minority groups with languages other than English will continue to require courses in English as a Second Language and perhaps additional tutoring before they can effectively compete in the college classroom.

Both statewide and regionally, it is clear that minority students will constitute a growing proportion of the students in the California community colleges. While the impact of this factor may vary by region--and even by college--it is a factor with which every district must be prepared to cope.

Inadequate Preparation for College

Somewhat related to the demographic factor of the increasing proportion of minorities in California's population, are the issues arising from the relatively poor-quality elementary and secondary education which many minorities receive, and their subsequent lack of preparation to undertake college-level courses. However, far from

being uniquely a problem for minority students, lack of adequate collegiate preparation now affects students from all socioeconomic and ethnic backgrounds. The recognition of this factor has caused many colleges and universities to initiate remedial courses and programs, at a considerable cost both financially and in terms of program quality.

A study of remedial education in California's public colleges and universities published by the California Postsecondary Education Commission in 1983, found that the University of California spent $6.6 million on remedial courses and support services in 1980-81, the State University spent $9.3 million, and the California community colleges $66 million. The $66 million spent by the community colleges in 1980-81 represents a 36.6% increase over remediation expenditures in 1978-79. The average remediation expenditure per college increased from $527,819 in 1978-79 to $705,776 by 1980-81 (California Postsecondary Education Commission, Report 83-2, 1983).

Clearly, the cost of inadequate preparation of entering college students is high in all three postsecondary segments, but highest in the state's community colleges. With the University and State University now charged with decreasing their efforts at remediation over the next several years, the demands on the community colleges in this area may multiply dramatically. On at least one University campus, enrolled students are told to take the necessary remedial courses through the local community college, which operates both remedial mathematics and English programs on the University campus. At the same time, community colleges statewide are increasingly assessing their entering students and requiring remediation before the student can progress to the collegiate-level courses. Both these phenomena--concurrent enrollment of four-year college students in remedial courses at the community colleges, and increasing assessment and subsequent remediation of students in two-year colleges--portend considerable increases in the extent and cost of remediation in the community college segment.

Limits on Government Spending and State vs. Local Funding

The Introduction of this paper commented on the passage of Proposition 13 in 1978 and the subsequent limits on state government expenditures. While the immediate effects of Proposition 13 were softened by a $6 billion surplus in the General Fund which was used as "bail-out" money for local government and education, the impact of this proposition--and several related ones-- was to limit the growth in state revenues and state expenditures. When the new governor took office in 1983, the state was facing fiscal collapse and severe measures were put in place to bring expenditures in line with revenues. While the economy has improved markedly over the past several years and the state has paid its debts and has now has a modest surplus, the effects of the state funding situation on the community colleges have had two extremely negative effects--first, loss of funding and second, loss of control over the funding.

Besides the limits on state revenues which brought about the severe cuts in funding for the community colleges, the shift from a local property tax funding base to a state funding base has meant a loss of control over both the source and the amount of funding available to support college programs and services. In a report on Principles for Community College Finance published in March, 1983, the California Postsecondary Education Commission wrote:

> *"Proposition 13 limited a local district's ability to adjust general purpose and permissive tax rates to meet overall district budget needs. The state- level allocation of local property tax revenues has, in essence, made the California Community Colleges a State-funded system. The only sources of revenue over which local boards now have some control are permissive student fees, categorical funding sources, district reserves, and contracts or other revenues from business and labor; revenue sources which constitute a small fraction of the total revenues needed to support current operations in the colleges. Existing permissive fees in the Community Colleges have increased substantially in the past two years as districts attempted to cope with limited tax resources."*
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> *(California Postsecondary Education Commission, Report 83-14, March 1983)*

The bill which finally resolved the 1983-84 funding impasse and established tuition also abolished the vast majority of permissive fees in the colleges, thus even further limiting their fiscal control.

The future of funding for the state's 106 community colleges remains uncertain, but one fact is evident: funding decisions will continue to be made in the Legislature and not at the local district level until there is an alteration in the current funding mechanism. There are increasing calls for different models of funding for the colleges, and many of the alternatives involve sources of local funding in addition to the state budget. Whether such alternatives, currently under discussion by the Master Plan Commission, are workable solutions to the problems of loss of control over the level and type of funding for the community colleges remains to be seen. In the meantime, the districts will have to continue their presence in Sacramento to make clear their needs for funding from the State Legislature.

Competition for State Funds

The move from local to state funding has introduced another external factor in the funding equation, that of competition for state funds from other educational segments and social programs. With funding decisions being made at the state level, the community

colleges must compete with the University, the State University, and the K-12 system in the educational community, and with welfare, Medi-Cal, and a host of other priorities in the social programs sphere. It is clear that in the 1984-85 State Budget, the community colleges stood to the rear of the rest of the educational community in terms of appropriations of new dollars. The local districts and colleges have only recently begun to work in coordinated fashion to make their needs and responsibilities known to the Legislature, and increasing amounts of time and money may have to be allocated to receive a fair hearing against other traditional legislative priorities.

The Economy and State and Local Labor Markets

The California economy is projected to grow faster than the national economy during the 1980's. Approximately 15 percent of all new jobs in the nation will be found in California in 1990. The projected growth in jobs will be the major factor in the increase in California's population and in total personal income, which is projected to grow by between 35.2 percent and 52.8 percent depending on the rate of productivity growth nationally (Center for Continuing Study of the California Economy, 1981, p. 6). A considerable part of this growth is projected to occur in the high technology areas of computers, electronics, and communications, all sectors which experienced an increase of over 37 percent from 1977-1980. The future scenario is for continued growth in these areas, due in part to California's above-average share of the nation's jobs in the high technology and space and aircraft industries. The state's healthy economy is also expected to encourage additional migration of workers from other states and immigration from other countries, particularly from Mexico and South American and Asian countries.

The impact of the economy on the state's ability to adequately fund the community colleges has been alluded to earlier in the section on state funding. However, the health of the economy and the availability of employment also influence enrollments in the community colleges. In general, if the economy is in a period of recession and people find it difficult to obtain jobs, student enrollments increase in the community colleges as people seek to improve their education and training in order to better compete for those jobs that may become available. When the economy improves and the availability of jobs increases, many students opt for employment and either leave college (often temporarily) or continue only on a part-time basis. The end of the early 1980's recession and the improved economy of both the state and many local regions, have been major factors contributing to the statewide enrollment declines in the community colleges since 1983.

The need to improve the assessment of state and local labor markets has led to increased cooperation among local districts, the Employment Development Department, and local business and industry. Throughout the state new initiatives are being undertaken to improve

local labor market assessment, not only to determine the impact of the labor market on enrollments, but also to better equip the colleges to meet the needs of business for well-trained employees and of students for employment.

Increased Accountability and Regulation

Both federal and state governments have seen fit to play an ever-increasing role in ensuring the accountability of postsecondary education to the public--or at least to federal and state political concerns. Statutes and regulations covering virtually every aspect of education--from student access, to funding for specific programs, through the sex and ethnic composition of faculty and administration --are now the rule rather than the exception, and perhaps more so in the community colleges than in the other sectors of California post-secondary education. The community colleges share with the K-12 sector a history of regulatory involvement on the part of both state and federal governments. While one may well argue that the post-secondary education system would not be appropriately accountable for its expenditures nor be willing to make efforts in affirmative action without government mandates, it is important to remember that such demands for accountability involve considerable costs--costs which, in public institutions, are ultimately borne by the taxpayers.

From the point of view of the community college district, the costs of compliance with a host of regulations and conflicting reporting requirements affect the amount of funds that can be spent to improve the breadth and scope of the academic and vocational programs. While accountability for the wise expenditure of state dollars is to be expected, consideration should be given to the necessity for and benefits of increased accountability as compared to the costs of such accountability, before new regulations are imposed upon the colleges. The community colleges may be able to influence the debate over increased accountability by carefully evaluating the costs and benefits of the current accountability mechanisms, proposing alternatives, and participating in the state-level development of an improved mechanism for accountability over the next year.

Public Opinion: Program Quality and Academic Standards

Public opinion about postsecondary education--its quality, its benefits to society and to the individual--is of considerable importance to the educational enterprise. The attitude of the public about its educational system often translates into political support for--or opposition to--increased funding for educational institutions. The closer the institution to the local level, the more public opinion matters about the quality of that institution and its worth to the community. In postsecondary education, the community colleges are the institutions closest to the community, and

therefore under the severest scrutiny as to the quality of their programs and courses. In the past, many communities demonstrated their support for their local community colleges by passing bond initiatives to enhance academic and vocational programs. This gauge of local support for the community colleges is no longer available since the shift to state funding.

Over the past several years, there have been indications that public opinion about the community colleges has become increasingly critical. While perhaps as many as one out of every two adult Californians has taken a course at a community college, indicating considerable public support, public attitudes--particularly as expressed through the state Legislature--have varied as to the appropriateness of what some districts were providing at public expense. The charges that some districts were offering "frivolous" courses resulted in a deletion of some $30 million from the statewide budget for the community colleges in 1982, a cut that affected all districts, not just the targeted few. More recently, public opinion generally supported the governor in his ultimately successful efforts to impose tuition on community college students in the Fall of 1984.

Public concern about program quality and academic standards has also surfaced in forums on the health of the community colleges' transfer function. While in actuality relatively few students attend the community colleges in order to transfer to four-year institutions --especially when compared to those who come for specific occupational training or job skills upgrading--public concern about the quality of the transfer program is being transformed into legislative initiatives. The ability of the community colleges to demonstrate the quality of their programs and their maintenance of academic standards may well lie in conducting research into, and providing better public information about, the many curricular reforms--such as assessment testing, prerequisite courses, and business/labor advisory committees for vocational programs--that have been undertaken in the past several years at both state and local levels.

INTERNAL FACTORS

Enrollment-Driven Funding Formulas

The fact that California's public colleges and universities are funded on an enrollment-driven formula basis is perhaps the chief internal economic factor affecting the system of postsecondary education. During the past decades, as enrollments grew, funding increased, allowing colleges and universities to meet their growing needs for buildings, faculty, and student services. The fact that funding was tied to enrollments often masked the effects of inflation: as Bowen and Glenny report, "One senior administrator suggested that he and others had become so accustomed to rapid enrollment growth that they `failed to recognize the degree to which they had become dependent on dollars appropriated to cope with

increased enrollments to offset concurrent but unrelated problems resulting from inflation.'" (Bowen and Glenny, 1980, p. 2-3).

Now that enrollments are either stable or declining, the dollars associated with growing enrollments are no longer available to offset inflation. The formulas that were so profitable to educational institutions as they grew are causing problems as enrollments decline. Since many institutional costs continue even if enrollment declines, taking away dollars on the same basis that they were added can seriously diminish a college's funding base.

Unfortunately, no long-term mechanism for funding the state's community colleges that takes into account any measures other than ADA has yet been devised. The contact hour funding mechanism has a further deleterious effect on the colleges that is now being felt severely: as credit load per student (and thus contact hours) declines as it has across the state, the dollars decrease, while the per student cost for services such as assessment, counseling, and placement may well increase. The Master Plan Commission is currently reviewing the various alternatives to the ADA mechanisms like those in the University and State University--and is expected to recommend an alternative to the present system of funding by February 1986.

Faculty and Staff Compensation and Benefits

Directly related to a college's ability to generate ADA and the resultant funding, is the ability of that college to provide adequate compensation and benefits to its faculty and staff. In times of fiscal constraint, most colleges refrain from increases in these areas, but the results can be harmful. If the period of little or no increase in salary or benefits is a limited one (less than two years), the institution can probably restore the lost buying power out of subsequent better budget years. If, however, as has been the case with a number of community college districts in California, the period of fiscal difficulty has gone beyond two years, faculty and staff may never be able to recoup lost buying power. However, with the costs of faculty and staff compensation making up the vast majority of collegiate budgets, the ability of a district in a retrenchment mode to alter the situation is doubtful.

The long-term effects of this situation are difficult to assess but may include poor morale, lower productivity, and increased use of sick leave as faculty and staff begin to perceive that they are being left behind economically. If, in fact, productivity of faculty and staff does decline, it can increase the fiscal problems of the district or college, producing a downward spiral effect. A careful evaluation of the combined effects of this and other economic factors must be made so that a college can assess where it might increase productivity and generate savings that can be used to provide at least cost-of-living increases for faculty and staff.

A "Tenured-In" Faculty vs. Shifting Student Demand

One of the factors hampering the ability of an institution to respond to reductions in resources and to reallocation of those resources when needed, is the extent to which the faculty is "tenured-in" and the costs associated with this phenomenon. A faculty that is largely tenured and thus at the upper steps of the salary schedule, is an expensive faculty, and usually one that is overstaffed in the humanities and liberal arts areas and understaffed in the high demand areas of business and high technology programs.

Of the 16,167 full-time faculty of the community colleges in 1981, 89.2 percent were tenured (California Postsecondary Education Commission, Report 83-3, January 1983, p. 89). While districts across the state vary in the percentage of part-time to full-time faculty, the use of part-time faculty can only slightly moderate the effects of a high cost, tenured faculty. In addition, the factor of changing student interests--as demonstrated throughout California's entire postsecondary system in the shift of student enrollments from the humanities to the more vocational and professional programs--often combines with the tenure factor to produce a situation in which the college is virtually unable to shift its teaching resources fast enough to accommodate student demand, resulting in students turned away from high-demand courses while college enrollments fall (California Postsecondary Education Commission, Report 83-25, June 1983).

Community colleges statewide are trying various mechanisms to cope with tenured-in faculty syndrome. Some are increasing the proportion of non-tenure track or part-time faculty they hire; others are insituting programs that provide incentives for early retirement; still others are trying to retrain faculty from lower-demand disciplines to work in the high-demand areas. The need for a college to develop more flexibility in the area of faculty resources is clear; the ability to do so may be problematic.

Collective Bargaining

Faculty collective bargaining, authorized for the California community colleges in 1976, has introduced a new and somewhat uncertain factor into the internal environment of the colleges. Many community college districts now have faculty and often classified staff unions. The results of unionization are varied: in some districts, faculty, staff and administration report improved relations, while in others collective bargaining is blamed for numerous evils, from devisiveness and lack of collegiality to resource constraints and programmatic rigidity. In reviewing the available literature it appears that collective bargaining serves primarily as a catalytic factor in the institional environment; that is, if the collegiate environment is oriented toward consensus and collegiality, the advent of collective bargaining will have relatively little impact, either positively or negatively. However,

if the environment of the college or district is one of suspicion and discord, collective bargaining may exacerbate the situation as legalistic distinctions are drawn between "management" and "labor".

The maintenance of a positive collegiate environment in the midst of a period of fiscal constraints and programmatic retrenchment--such as in California community colleges over the past several years--may well prove impossible, with the potential outcome of increased unionization as faculty and staff struggle to maintain their economic footholds. Whether collective bargaining has been a positive force in the sphere of faculty and staff compensation in community college districts statewide remains to be assessed.

The effects of collective bargaining may interact with other internal factors to produce an even more rigid institutional environment if, as Glenny posits, collective bargaining by faculty members makes it "increasingly difficult, even if thought desirable, for higher institutions to make major changes in programs, work patterns, lengths of courses, and times to teach" (1980, p. 377). It is these kinds of alterations--alterations that competing independent and proprietary institutions have been making with increased enrollments as the result--that must be made by the community colleges if they are to continue to attract the growing numbers of older, working, and part-time students as clientele.

Social Justice and Affirmative Action

One of the major sociopolitical factors that has influenced postsecondary education over the past two decades has been the public desire for social justice, for an expansion of access to education that would assist in achieving social equity for all persons, regardless of race, sex, or national origin. The sixties and seventies led American society to an increased concern about the full participation of women and minorities in the educational enterprise. At first, the concern was primarily for access for students; only later was the concern broadened to include participation of women and minorities as faculty and administrators in collegiate institutions.

California, with its large minority population and open access community college system, led the way in affirmative action for students and faculty throughout postsecondary education. But while there have been notable successes in expanding access to an increasingly diverse student clientele, the goal of equitable participation--particularly in the faculty and administrative ranks--has not been achieved.

Minority students are considerably better represented in the state's 106 community colleges than in the University or State University. In 1981, over 30 percent of community college students were from ethnic minority groups. In comparison, however, only 21 percent of administrative and managerial staff, and 14% of the faculty in the community colleges were ethnic minorities. The

picture for women was even more grim: while women constituted 55.7 percent of the community college student body, they held only 26.3 percent of the administrative positions and 33.9 percent of the faculty positions. The pattern held true for women of every ethnic group (California Postsecondary Education Commission, Report 83-3, 1983).

In recent years the public's desire for social justice has moderated considerably and competition for jobs has replaced concerns for affirmative action. Despite the general understanding that men and women of diverse linguistic, ethnic, and cultural groups have contributed to the intellectual and artistic history of our society, the conservative national mood and continuing unemployment have contributed to a lessening of support for affirmative action programs.

The community colleges are not immune to this shift in attitudes, and with the serious fiscal problems that have recently beset the colleges, the situation is aggravated. A study of Women and Minorities in California Public Postsecondary Education, published in 1983 by the California Postsecondary Education Commission, examined the question of why the goal of fully integrating women and minorities into administrative and faculty ranks has proved so elusive. The answer included negative attitudes, a lack of commitment, resource contraints, small availability pools and the lack of qualified candidates in some of the more "high-demand" disciplines, the effects of collective bargaining and "seniority" clauses, and a concentration on "paper compliance"--on process rather than outcomes (California Postsecondary Education Commission, Report 83-3, 1983). The maintenance of the modest gains made by women and minorities in the community colleges in the face of the obstacles cited above, will require vigorous efforts and creative approaches on the part of college students, faculty and staff in the years ahead. If California is destined to become the first state in which a majority of the people are of ethnic minority ancestry (and the majority are already women), then institutions of postsecondary education--and particularly the community colleges--by reflecting that diversity of linguistic and cultural backgrounds in their students, faculty, and staff, can assist in achievement of an integrated--rather than a factionalized--society. The social cost of not achieving this integration could well have serious consequences for an ethnically diverse state.

Plant and Maintenance Costs

One of the internal factors that is beginning to affect the state's community colleges, is the factor of increasing costs for maintenance and replacement of their physical plants. While the energy crises of the late seventies have moderated, there is no question that the overall trend in energy costs is upward. With continuing increases in energy costs, the costs of operating the physical facilities of a college will increase: heating, air

conditioning, and other utilities will be more expensive and the costs of operating college and district vehicles will increase. Indeed, the costs of replacing the old physical plant or building a new one may well be prohibitive unless additional state or local funding is forthcoming.

In addition to operational and replacement costs, the savings generated from deferred maintenance on the physical plant may well become unforeseen costs as maintenance too long deferred begins to mean complete overhaul or replacement of facilities, grounds, and equipment. Given the increasing demand for programs in the high technology--and high cost--fields, additional expenditures for upgraded technical facilities and equipment can be anticipated. The best way to plan for major capital outlays is to budget strategically, over the long range of several years, saving a certain proportion of each annual budget toward the costs of the new or renovated facility. Without such strategic planning, the likelihood of a college or district coping successfully with the factor of increasing plant and maintenance costs is relatively slim.

Pressures for Centralization of Authority

One final factor that operates both within the internal environment of a collegiate institution and throughout the system of postsecondary education in general, is that of the pressure for increased centralization of authority, management, and decision-making. At the institutional or district level, as resources are constrained and difficult decisions must be made regarding where those resources ought to go, those decisions will increasingly be made at higher and higher levels. At the single college, those decisions will move from the general consensus level (since there is often no consensus about budget reductions) to the college's highest administrative levels. In a multi-campus district, the prerogatives of the campus administration to make decisions may shift increasingly toward the district administration, as concerns for the maintenance of program diversity and academic quality move beyond the individual campus to the districtwide level. At the statewide level, an increasing number of decisions regarding the appropriate distribution of programs and the equitable allocation of resourses may need to be made by a governing or coordinating body with a statewide, rather than district or campus perspective. In their 1980 study, Bowen and Glenny discussed the difficulty with centralization as a concept and the reasons why it might be expected as a response to institutional stress:

> *"There is ... widespread recognition that no simple solution such as decentralization or centralization exists for...a complex problem--that the most productive way to deal with the problem is through careful analysis of the various functions to be performed and assigning these at the level at which they can be most effectively achieved."* (1980, p.43).

Determining which decisions need to be centrally made and which should be left autonomous campus units, is likely to be difficult in the erratic environment facing community colleges in the 1980s. But making the appropriate decisions about authority and autonomy can greatly increase the chance of an institution successfully navigating the uncharted years ahead.

IMPLICATIONS FOR RESEARCH AND PLANNING

It is clear that the environment for the California community colleges is dramatically different in the 1980s from what it was in the sixties or seventies. The external demographic, economic, and socio-political factors are eliciting changes in the colleges: changes to respond to differences in the age, sex, ethnicity and preparation of students; to shifts in student program choices and to labor market demands; to an erratic fiscal environment and to a volatile state and local economy; to increased legislative involvement, demands for accountability, and desires for both access and quality. The internal factors are also eliciting changes, while posing complex questions regarding the appropriate response of the community college system: whether and how to alter enrollment-driven funding formulas; how to handle increasing plant and maintenance costs, how to maintain adequate faculty and staff conpensation in the face of resource reductions; how to reallocate resources among competing priorities; how to respond to the needs of a new and quite different student clientele while maintaining traditional academic standards and high program quality; and finally, how to decide which decisions are best made at the district rather than campus level, and which may need to be made to be made at a statewide rather than local level.

In California currently, the ultimate resolution of these questions is no longer a matter of campus or district interest. With the Legislature's appointment of the Master Plan Commission, the need for a careful assessment of both internal and external environmental factors has become a statewide priority. As it seeks to understand what the community colleges are doing, and which aspects of their mission and functions are being done well or poorly, the Master Plan Commissions must rely on statewide and local data on such things as statewide vs. district demographics, socioeconomic patterns, local and regional labor markets, the potential effects of alterations in funding pattern, and the effects of the recently imposed tuition.

Local districts that have accurate assessments of the various environmental factors--that have the research available and are using it in their own strategic planning--are making a dramatic difference in the State-level discussions about the community colleges' mission and function. In the Los Rios District, for example, four major research projects undertaken for district purposes have been shared with State-level decision-makers and have succeeded in altering the nature and potentially the outcome of state-level discussions. The district's study

on the "reverse transfer" student phenomenon altered the way the State perceived the transfer function, since no research on the extent of those in the four-year public segments returning to community colleges--either with or without baccalaureate degrees--had previously existed. The district's two student follow-up studies revealed that the "nonreturning" student was not as most had assumed, a "dropout" but was more often a "drop-in"--an older student taking only one or two courses directly related to his or her employment. Our research confirmed that such students were often highly successful academically but had no interest in receiving a degree or certificate (indeed, many already held degrees). Whether such students should pay more for courses than a first-time or degree-oriented student is a matter of considerable debate at the State level, and these research studies on Los Rios vocational and general education students have been referred to by state-level staff in their deliberations.

The questions of whether the new tuition was responsible for the substantial statewide decline in the enrollment of black students that same fall was also addressed by the district's Office of Planning and Research, largely due to Los Rios' own loss of one out of every five black students from Fall 1983 to Fall 1984. The results of the district's telephone survey of all nonreturning black students, and the extensive evaluation of other factors associated with the performance of black students in the district's three colleges, showed that factors other than tuition (chiefly, job-related and personal factors) were responsible for the decline. A letter from the Speaker of the Assembly to the district's research office attests to the statewide effect of this local study. Finally, the district's newly released longitudinal study of some of 1800 transfer students and their performance at the University of California at Davis and the California State University at Sacramento, is helping to answer the question of whether students who take remedial courses in the community colleges can go on to do successful academic work in the four-year segments.

While all of these studies have their statistical components (SPSS-X was often used for analytical purposes), the studies were primarily aimed at answering policy--rather than purely research--questions. As part of assessing both internal and external environmental factors, the Los Rios District, through its "student flow" research model, seeks to answer questions such as: Who are our potential students in our service areas? How do their demographics differ from those we are currently serving? Is what we're doing in our various programs working and how do we know? What has been the effect of the new tuition on our student clientele? What happens to students once they leave our colleges--are they successful as transfers? As employees? In answering such questions, researchers--and those who use that research in their strategic planning for their institutions--are in better positions to cope successfully with the increasingly complex and negative factors in the environment of the 1980s. Indeed, they may have the ability not only to cope with change, but to be in a position to influence the very nature of that change.

REFERENCES

Bowen, Frank M. and Glenny, Lyman A., Uncertainty in public higher education: responses to stress at ten California colleges and universities. A Report to the California Postsecondary Education Commission, Sacramento, 1980.

California Employment Development Department, Projections of employment by industry and occupation, 1980-1985. Sacramento; September 1982.

California Postsecondary Education Commission, Major gains and losses: recent shifts in popularity of academic disciplines as fields of concentration. Report 83-25, Sacramento, June 1983.

California Postsecondary Education Commission, Principles of community college finance. Report 83-14, Sacramento, March 1983.

California Postsecondary Education Commission, Promises to keep: Remedial education in California's Colleges and Universities. Report 83-2, Sacramento, January 1983.

California Postsecondary Education Commission, The challenges ahead: issues in planning for California postseconday education,1982-1987. Sacramento, Report 81-26, November 1981.

California Postsecondary Education Commission, Women and minorities in California public postsecondary education: Their employment, classification, and compensation, 1977-1981. Report 83-3, Sacramento, January 1983.

Center for Continuing Study of the California Economy, California growth in the 1980s: Update. Palo Alto, California, 1981.

Glenny, Lyman A. "Demographic and related issues for higher education in the 1980s," Journal of Higher Education, 51 (4)383-380.

Millet, John D. Challenges in statewide planning for the 1980s. Academy for Educational Development Occasional Paper Number Nine. New York and Washington: Academy for Educational Development, 1979.

The third century: Twenty-six prominant Americans speculate on the educational future. Change Magazine Press, 1977.

Uhl, Norman P. (Ed.). Using research for strategic planning. New Directions for Institutional Research. San Francisco, Washington, London: Jossey-Bass, Inc., 1983.

Utterback, J. M. Environmental analysis and forecasting. In D. Schendel and C. Hofer (Eds.), Strategic management: A new view of business policy and planning. Boston: Little, Brown, 1979.

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

ASSESSING THE PROFESSIONAL DEVELOPMENT NEEDS OF COMMUNITY COLLEGE MANAGERS: A PARTICIPATORY APPROACH

Ken Kempner and Mary K. Kinnick

Since the mid-70's increasing attention has been given to the needs and methods for evaluation of the professional development of mid-level managers in postsecondary education (O'Banion, 1982; Leske & Frederickson, 1981; Farmer, 1979; Scott, 1978; Nordvall, 1979; Saville, 1978; Wagner, Sovilla & Andrews, 1974; and, DeHart, 1977). As Scott (1978) has pointed out:

> *The increasing numbers of these officials and the rising cost of administration make it an area we need to know more about if we are to offer program accountability to constituents, limit 'bureaucratic' growth, and achieve effective administrative organizations (p. 2).*

Limited research, however, has been directed toward identifying substantive areas for inclusion in these professional development programs. Lonsdale & Bardsley (1982) surveyed Australian college department heads to determine the range of administrative tasks performed. Their task analysis approach resulted in identification of the broad areas of budgeting and financial control, human relations and personnel administration and curriculum and instruction, among others.

Hammons & Wallace (1976) conducted a national survey of department and division chairpersons in public two-year colleges. Respondents were asked to indicate their opinions regarding the need for training in six major areas: general knowledge of the community college, managerial skills, personnel skills, administrative skills, curriculum and instruction skills, student personnel services and other. They concluded that "the stress on accountability, productivity, efficiency and effectiveness make it impossible to ignore the problems of middle management" and that the needs identified have "grave implications for the mission and operation of the community colleges if action is not taken to cope with them" (p. 108). Scott (1978) interviewed a national sample of college and university administrators and found that managers at all levels emphasized the need for training in a number of technical content areas, including budgeting, accounting and managing.

Perhaps not surprisingly the needs identified in both the research and prescriptive literature tend to fall into categories similar to the three skill categories (technical, human and conceptual) developed almost thirty years ago by Katz (1955) and

presented in his seminal article on "Skills of an Effective Administrator." He contends that as an individual advances in management from a supervisory to a top management position, the mix of skills needed changes. Those at the supervisory level are most in need of technical and human skills while those at the top level are most in need of human and conceptual skills. There has been, however, no direct testing in community college settings of the relationship between management level and skills needed as proposed in Katz's model.

Assessing the Needs in the Portland Metropolitan Area

Staff development officers from Clackamas, Mt. Hood and Portland Community Colleges, all located in the Portland, Oregon metropolitan area, approached community college program faculty at Portland State University for assistance with identifying the educational and training needs of their managers and administrators. Prior to this time, each college had, for the most part, planned and conducted its own staff development program.

Objectives of these officers were twofold. They wanted both a comprehensive and a detailed description of the learning interests and needs of managers and administrators on their respective campuses. And, they were highly interested in examining the potential for and the feasibility of joint program planning and the potential benefits which might result from such collaboration. DeHart (1977), in describing the management development program at DeAnza College, encourages colleges on a regional or statewide basis to cooperate in developing programs to meet common needs. He argued that such a collaborative strategy could reduce time and costs associated with an exclusive go-it-alone approach.

Portland State University faculty in the Community College Program were interested in establishing a more informed basis on which to develop and offer continuing education and professional development opportunities (specific courses, workshops, seminars) for these community college managers and administrators. The staff also wanted to learn more about times and places to offer programs, learning method preferences and whether or not there was interest in credit.

METHODOLOGY

Instrument Development Administration

Efforts to locate a survey instrument that could provide a comprehensive overview of learning needs and at the same time be information specific enough for program planning were unsuccessful. Consequently, a new instrument was developed. Items came from a variety of sources. Some were submitted by the staff development officers, based on their observations of important areas of learning

need and interest. Additional items resulted from a review of staff development program materials available from other community colleges. Still other items were generated after reviewing a number of texts on topics such as executive leadership, planning and management and organizational development. Finally, some were included because they represented subject matter covered in graduate level degree programs in management and administration.

This eclectic approach resulted in a rather lengthy list of ungrouped items. The item set was further reviewed for redundancy and completeness and items subsequently deleted or added. Items in the new set were then logically and conceptually grouped into ten categories. The ten categories of skill and/or knowledge, with the number of items in each category, are presented in Table 1.

TABLE 1

Survey Categories

	Category	Number of Items
1	Communications	5
2	Human Relations/Group Process	11
3	Organizational/Managerial	17
4	Planning	7
5	Program/Curriculum	11
6	Personnel Management	8
7	Legal Issues	6
8	Research Evaluation	15
9	The Community	4
10	Miscellaneous	11
	Total	95

A total of 95 items were included in this section of the survey. Respondents were asked to indicate their "level of interest or need" in each of the skill/knowledge areas listed. A five-point response scale was used, and responses could range from "low or none" (1) to "high" (5).

In addition, managers and administrators were asked to indicate their preferences in the time, place and organization of instruction and their interest in pursuing graduate degree work. A request for select demographic information (including age, race, gender and highest level of education achieved) was also included.

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The resulting instrument, "Survey of the Educational and Training Interests and Needs of Managers and Administrators in Portland Metro-Area Community Colleges," was distributed by each of the three community college staff development officers through campus mail in June 1982. All staff classifed by the colleges as management or administration received the initial survey and one follow-up reminder. A response rate of 60%, representing 112 usable surveys, was achieved.

Analysis

The resulting survey data were analyzed to answer three major questions:

1. Are the professional development needs and interests of managers and administrators in the three colleges sufficiently similar to warrant a collaborative approach to program planning and sponsorship?

2. What do these managers and administrators identify as highest and lowest areas of need for professional development opportunities? and,

3. How good is the survey instrument itself, and how might it be improved?

The Statistical Package for Social Sciences (SPSS) was used to analyze the survey data, using both the cross-tabulation and factor analysis sub-programs.

RESULTS

Descriptive Analysis

Selected respondents characteristics are presented in Table 2. As indicated, the group is predominantly white, largely male, and seasoned veterans at their respective colleges. The group is well educated with most individuals at the Masters or post-Masters level. Many respondents are interested in additional learning or instruction and would prefer it consist of short courses conducted at community college sites in the late afternoons on weekdays. This profile described the three community college groups equally well.

Knowing respondent's characteristics and their preferences for continuing education, the analysis turned next to determining the extent to which interests and needs expressed were similar across the three colleges. Overall, the similarities far outweighed the differences. While there were some differences in rank order of the various items and survey categories, placement of these items and categories (e.g., in the top or bottom) was strikingly similar across the colleges. Consequently, only summary results for the three colleges, as a group, are presented and discussed.

TABLE 2

Descriptive Information on Community College Managers

N = 112

	Frequency	Percent
Race		
Asian	4	3.6
Black	2	1.7
Caucasian	102	91.1
No response	4	3.6
Age		
26-39	40	35.7
40-49	36	32.1
50 +	35	31.3
No response	1	0.9
Sex		
Female	40	35.7
Male	71	63.4
No response	1	0.9
Years at College		
1 year or less	9	8.0
2-4 years	25	22.3
5-10 years	27	24.1
11 years or more	51	45.6
Level of Education		
BA or some college	35	31.3
MA	67	59.8
Doctorate	10	8.9
Wish to Pursue Graduate Study		
Yes	45	40.2
No	63	56.2
No response	4	3.6

Table 3 highlights, in rank order, the 9 broad areas of skill and knowledge of most interest to these managers and administrators. The areas specific to management and planning were of most interest. Items related to human relations/group process were rated of lowest interest and need. Research and evaluation, as a broad category, also did not engender much interest for those surveyed.

TABLE 3

General Content Areas in Rank Order

Rank	Skills/Knowledge Content Area	No. of Items	Average of All Items in the Area (mean)*
1	Organizational/Managerial	17	3.14
2	Planning	7	3.14
3	Personnel Management	8	2.97
4	The Community College	4	2.95
5	Communications	5	2.88
6	Programs/Curriculum	11	2.85
7	Legal Issues	6	2.81
8	Research and Evaluation	15	2.73
9	Human Relations/Group Process	11	2.70

*1 = Low Interest/Need
5 = High Interest/Need

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Specific survey items of highest and lowest interest and need are summarized in Table 4. Microcomputer applications was identified as the item of highest interest, followed by interest in new linkages with business and industry. Other areas of most interest included: several related to managerial or organization; group process skills and, planning and futurism. Items of lowest interest and perceived need included several related to instruction and curriculum and a number related to special populations (i.e., Vietnam veterans, women, and racial and cultural minorities).

TABLE 4
Highest/Lowest Areas of
Knowledge/Skill Needs or Interests

Rank	Highest Content Areas	Rating Score (Mean)*	Lowest Content Area	Rating Score (Mean)*
1	Micro-Computer Applications Academic and Administrative	3.97	Cognitive Mapping, Applications	2.17
2	New Linkages with Business/ Industry	3.58	History and Philosophy of the Community College	2.26
3	Sources of strategies for Overcoming Resistance to Change	3.54	Vietnam Veterans	2.41
4	Team Building Strategies	3.51	Sexual Harrassment	2.41
5	Conflict Resolution Strategies	3.48	Community Development Models	2.42
6	Long-Range Planning	3.42	Writing	2.45
7	Strategies for Increasing Adoption of Innovations	3.41	Conducting Economic Impact Studies	2.46
8	Problem-Solving Techniques	3.41	Curriculum Development Models	2.47
9	Futurism - A Look at Implications for Community Colleges	3.36	Learning Theory	2.48
10	Computer-Assisted Instruction	3.33	Multicultural Education	2.49

Although description of the survey results, as presented in the preceding tables, does provide a summary of where manager interests lie, there was also an interest in the broader dimensions of professional development considered in this survey. For example, what other issues did these respondents see related to research and evaluation? The following section investigates these dimensions through factor analysis and considers the value of the survey in distinguishing interests and in organizing what these administrators feel is important for them to know.

Conceptual Analysis

Reexamination of the content areas of the instrument served two purposes: evaluation of the instrument itself and evaluation of the outcomes of the survey. By understanding the underlying dimensions of the content areas the meaning of the interest areas surveyed by the instrument can be better understood. For instance, in the preceding example concerning research and evaluation, these concepts may have very different meanings for individuals. Likewise, does an interest in Community College History necessarily belong in the same category with Futurism for Community Colleges, as listed in the survey? Even though the content areas were categorized on a conceptual basis, the resulting categories may not necessarily be discrete or the knowledge and skills consistent within each group.

Factor analysis was used to dissect the content areas. Because of the large number of skills/knowledge areas and the limited sample size of the study (n = 112), successive factor analyses were conducted with smaller groups of several content areas to determine what major categories would emerge. For example, factor analysis was conducted with Area 1 (Communications), Area 2 (Human Relations), and Area 3 (Organizational Skills) to determine if the three areas could yield a more parsimonious organization of the content areas and of the individual items. When conducting this particular factor analysis, Area 3 was found to be tapping concepts quite different from Area 1 or Area 2. Subsequent analyses indicated that Area 3 and Area 4 (Planning) yielded a good conceptual fit and that three distinct factors emerged to explain the dimensions of the 24 skills/knowledge items included within these two major content areas.

Following the procedure outlined above, a series of factor analyses were conducted, first, to identify which content areas could be grouped together and, second, to find the factor structure that appeared to explain best the underlying dimensions within the areas grouped together initially. Table 5 presents a summary of the factor structures for all the skill/interest areas with the most significant variables and factor loadings.

The three factors that offered the best fit of the conceptual model for Area 3 and Area 4, for example, are found in Table 5 along with the individual items loading most heavily on these factors. As the table shows, Managerial Skills, Strategic Planning, and Budgeting appeared to be the best conceptual organizers for the 24 items included within these two major content areas. Items such as Organizational Development Models, Organizational Behavior and Analysis and Decision-Making appear to group together under a strong factor labeled "Managerial Skills." Likewise, Long-Range Planning, Strategic Planning and Facilities Planning appear to indicate a unique factor labeled "Managerial Planning." Finally, items such as Budget Planning and How to Construct and Manage a Budget fit well under the third factor labeled "Budgeting."

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TABLE 5
Summary of Factor Structures of Skill/Interest Areas
for the Most Significant Variables

Area 3 (Organizational and Managerial) and Area 4 (Planning)

Factor 1 Managerial Skills		Factor 2 Managerial Planning		Factor 3 Budgeting	
Variable	Loading	Variable	Loading	Variable	Loading
Organization Behavior	.723	Long Range Planning	.833	Budget Planning	.848
Organizational Dev.	.633	Strategic Planning	.615	Financial Plan.	.780
Decision Making	.655	Facility Planning	.596	Constructing Bud.	.746
Percent of Variance	78.5		13.5		7.9

Area 8 (Research and Evaluation) and Area 10 (Miscellaneous)

Factor 1 Cost Analysis & Forecasting		Factor 2 Evaluation & Research		Factor 3 Marketing & Dev.	
Variable	Loading	Variable	Loading	Variable	Loading
Cost Analysis	.682	Program Revision	.759	Fund Raising	.879
Cost Benefit	.614	Research Design	.738	Foundation Dev.	.625
Economic Forecasting	.607	Needs Assessment	.607	Marketing	.608
Percent of Variance	78.3		13.8		7.9

Area 5 (Programs and Curriculum) and Area 9 (Community College)

Factor 1 Innovation in Instruction		Factor 2 Current Issues	
Variable	Loading	Variable	Loading
Innovation in Inst.	.805	Current Issues	.814
Cognitive Mapping	.776	Open Admissions	.784
Learning Styles	.754	Phil. of Comm. College	.721
Percent of Variance	72.1		27.9

Area 1 (Commications), Area 2 (Human Relations), Area 6 (Personnel Management), and Area 7 (Legal Issues)

Factor 1 Legal Issues		Factor 2 Special Populations		Factor 3 Communications	
Variable	Loading	Variable	Loading	Variable	Loading
Sexual Harrasament	.811	Minorities	.825	Writing	.625
Contract Administration	.764	Refugees	.774	Public Speaking	.622
Collective Bargaining	.757	Vietnam Vets	.724	Ex. Commun. Sys.	.616
Percent of Variance	67.1		20.3		12.5

appeared to be the best conceptual organizers for the 24 items included within these two major content areas. Items such as Organizational Development Models, Organizational Behavior and Analysis and Decision-Making appear to group together under a strong factor labeled "Managerial Skills." Likewise, Long-Range Planning, Strategic Planning and Facilities Planning appear to indicate a unique factor labeled "Managerial Planning." Finally, items such as

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factors explained best the dimensions among the 26 items included in these two areas: Cost Analysis and Forecasting, Evaluation and Research, and Marketing and Foundation Development. As with the previous areas considered, the factor analysis was able to group the many items into three clearly identifiable factors.

Factor analysis with Area 5 (Programs and Curriculum) and Area 9 (Community College) served to support, to a large degree, the conceptual grouping of these categories in creation of the instrument. Each factor has been relabeled to better describe the items it appeared to be tapping: Innovation in Instruction, and Current Issues in Community Colleges. While these factors are quite similar to the original conceptual grouping, they do serve to support the value of the items considered and strengthen the value of the responses to these two basic issues.

The final grouping of areas was the largest, with Area 1 (Communications), Area 2 (Human Relations), Area 6 (Personnel Management) and Area 7 (Legal Issues). These four major content areas fit best within a structure of three factors: Personnel Management, Needs of Special Populations, and Communication Skills (See Table 5). The grouping of the 30 individual items into the three factors appears to offer a much better conceptual organization of the dimensions considered.

DISCUSSION

It is important to recognize that the approach used to assess needs in this study is but one of the several methods available. For example, only top executives could have been asked what they perceive to be the professional development needs of their managers. With the lack of information on the professional development needs of this group of community college managers and given the study objectives, the approach used here appeared to offer the most promise. The similarity of knowledge and skill areas of interest and perceived need among those surveyed was especially noteworthy and has provided a framework for program planning discussions among the community college staff development officers and Portland State University faculty.

While some of the results might have been expected, others were not. For instance, the ranking of microcomputers and business-industry linkages as the top two areas of interest was not surprising. Also, it might have been predicted that the organizational/managerial and planning areas, as general categories of interest and learning, would emerge as the top two categories.

Several results, though, were not expected and should be of concern to community college chief executive officers and other top level administrators. In particular, why are areas such as multi-

cultural education, learning theory and curriculum development rated so much lower? Managers may feel they already know enough about these areas or that these areas should be of more concern to others, for instance, teaching faculty. A finding of low interest and low perception of need for skills and knowledge in a particular area, however, does not necessarily mean there is little need for attention to that area or that the area is not relevant to the manager group. While a manager may not have direct responsibility for teaching, for instance, how students are being taught should be of a paramount interest to all personnel, since service to students is a primary mission of community colleges. Additionally, concern over minority groups and other disadvantaged student groups should be of continued importance to all managers trying to serve students and the community equitably.

The factor analysis helped to identify content areas which appear to be highly related. The results have served to improve the planning process of professional development programs by providing a clearer picture of substantive areas which need to be addressed within certain categories. For instance, a responsive program or series of programs in the "managerial skills" area should include attention to organizational behavior, organizational development and decision-making. A more narrow treatment of the topic risks exclusion of subject matter of major interest.

The analysis also provided information useful in further refining the survey instrument. Findings point to the regrouping of some items under alternative categories, the renaming of some and the deletion of redundant items.

While no attempt was made to test directly the Katz (1955) model, which posits a relationship between skill needs and management levels, several observations can be made. Findings appear to match somewhat with those which might have been expected. These managers, most of who can best be characterized as middle management in the Katz schema, placed heavy emphasis on knowledge and skill needs in the conceptual area (i.e., organizational and planning skills). Although not a category itself, a number of items of highest importance fell in the human relations area. Of considerably less interest, as would be predicted, were areas with substantial technical content.

CONCLUSION

Managers in the three community colleges were found to share a common set of professional development needs and interests. Survey results reflected more similarities than differences in the general strength and direction of needs and interests identified by managers in the three community colleges. The findings suggest collaborative efforts should increase among the community colleges to meet the professional development needs of managers. Results also suggested a number of priority areas which should receive initial attention from the program developers.

The factor analysis helped to reveal the underlying meaning of many of the survey items and categories. The resulting factors and factor loadings served to enhance the conceptual meaning of the survey instrument itself and to improve the grouping of specific items within the various categories. As a result, the instrument is sounder conceptually and shorter.

IMPLICATIONS FOR PRACTICE

One indicator of the usefulness of such an assessment effort is the extent to which results are actually used. A highly successful short-course on managerial applications of microcomputers was held on the basis of findings from the needs assessment. Even though applications of microcomputers was identified as a need in the survey, the course attracted more participants than expected from six Oregon community colleges, including managers from the three colleges included in the survey. Costs and charges to participants were kept to a minimum due to the availability of space and facilities offered at no cost by one of the local community colleges. Top administrators in several of the colleges encouraged managers to attend, and in many instances, paid the registration fee. One-fifth of those participating elected to complete a special follow-on project and earn one credit. All completed the project.

A successful program obviously depends on more than a survey. The expertise and judgements of members of the planning team about the particular content and experiences to include in the program and the instructional resources to select are critical. Survey results, however, can serve as a focal point for developing program plans and as a means for achieving a stronger sense of joint ownership in the planning process among the college representatives involved.

The needs assessment and program planning approach used in this study allows the recipients of the resulting programs to have some direct influence on the shaping of the content and general character of the programs. Those needing and wanting certain kinds of professional development opportunities should be participants in the selection process. This is not the case when service or program providers market their wares with little advanced consultation with those they seek to serve. Despite initial appearances, these programs are oftentimes not what the participant expects. This is also not the case when top executive or staff development officers decide independently that all managers will participate in a particular program. While all may indeed participate, the effectiveness of such programs may be limited because some participants are less than enthusiastic about attending in the first place.

Finally, although managers may have little interest in a specific area, such as special needs of minority students, the participatory approach used in this study suggests there may be blind spots needing attention in an effective program. Findings from this study show the importance of having managers participate in program development. Direction from expert planners, however, is vital if the program is to address the critical issues for community college managers.

REFERENCES

Dehart, R.A. The continuing education of administrators. New Directions for Community Colleges, 1977, 19, 1-10.

Farmer, C.H. Administrator evaluation: concepts, methods, cases in higher education. Richmond, Virginia: Higher Education Leadership and Management Society, Inc., 1979.

Hammons, J.O. & Wallace, T.H.S. Staff development needs of public community colleges department and division chairperson. Planning and Changing, 1976, 7, 97-112.

Katz, R.L. Skills of an effective administrator. Harvard Business Review, Jan-Feb 1955, 33-42.

Leske, G. & Frederickson, S. Needs assessment for vocational education/administrators: an evolving system for staff development decision-making. User's manual. Minneapolis: Research and Development Center for Vocational Education, University of Minnesota, 1981.

Lonsdale, A. & Bardlsey, W.N. The administrative tasks and professional development needs of heads of academic departments. Branddon: Australian Conference of Principals of Colleges of Advanced Education, 1982.

Nordvall, R.C. Evaluation and development of administrators. American Association for Higher Education-ERIC/Higher Education Research Report. No. 6, 1979.

O'Banion, T. Guidelines for organizing staff development programs. Community and Junior College Journal, 1982, 52, 19-21.

Saville, A. Interpreting middle management roles in higher education. College Student's Journal, 1978, 5, 387-392.

Scott, R.A. The development of competence: administrative needs and training goals in American higher education. New York: Exxon Educational Foundation, 1978.

Wagner, T.E., Sovilla, S.E. & Andrews, J.B. A development program for middle managers. College Management, 1974, 9, 15-17.

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MULTIVARIATE ANALYSES OF URBAN COMMUNITY COLLEGE STUDENT PERFORMANCE ON THE ACT COLLEGE OUTCOMES MEASURES PROGRAM TEST

Gloria Kitabchi

INTRODUCTION

The purpose of this study was to examine the relationship and relative importance of selected variables to succesful performance of urban community college students on the ACT College Outcome Measures Program (COMP) objective test. Specifically, the importance of age, race, gender, type of degree, program/major category, admissions criteria, and ACT pre-entrance scores was investigated. Instructional strategies for increasing general education knowledge and skills could then be developed for subgroups of students with less successful performance on the COMP.

Measurement of the improvement of general education skills was the aim of the COMP examination. The American College Testing Program developed the test in 1976 to assist colleges and universities in their efforts to help students to persist to graduation and to acquire knowledge and skills important to functioning effectively in society following graduation.

There is a very limited amount of published research on performance of community college students on the COMP objective test. In 1975, Farver, Sedlacek, and Brooks noted that ". . . our institutions are changing and more blacks are entering colleges and universities. . ." (p. 249). They further warned that race/sex subgroups should be differentially predicted and additional variables such as external control researched and used.

In one of the few published articles on the COMP Objective Test, Ward and Pringle (1984) examined the quality of nontraditional graduates based on performance on the COMP. They noted that ". . . few direct comparisons of traditional and nontraditional students' actual performance have been made. . ." and "little distinction is made between nontraditional students (in terms of age, education, etc.) and nontraditional programs" (p. 368). These authors established that reliability estimates on the COMP for nontraditional students in their study were similar to those of a norm-reference group of traditional students. They concluded that the results of their study demonstrated that the COMP Objective Test was not biased against the nontraditional students in their sample.

The population of students at Shelby State Community College (SSCC) could be described as nontraditional on the basis of age, race and other demographics. The average age of students completing degree requirements at the college was 31 years and many of the students depended on financial aid or were employed on a full-time basis, and could be classified as first generation college students.

METHOD

Shelby State Community College (SSCC), an urban college with a predominantly black, female enrollment has an open admissions policy for all but nursing and allied health programs. All students completing any type of degree program (transfer or career) were required to take the COMP in order to graduate, however, graduation was not contingent on the magnitude of the score. The COMP was designed specifically to measure skills of students in degree programs with a general education component. Community college transfer programs designed to prepare students who plan to complete a four year degree (university parallel) are the target group for the COMP assessment. University parallel degree programs are referred to as "transfer" degree programs in this study. However, career degree programs at SSCC also have a general education core, therefore the test was also considered appropriate for this subpopulation.

The COMP was administered to all SSCC students who filed an "intent to graduate" form in 1982 and 1983. COMP scores were available on 696 examinees. The test scores were machine-scored at ACT and returned on tape to SSCC. Matching social security number against the Student Master and Archival Student Master files subsequently assured correctly coded information relative to demographics, degree and major.

Frequencies and descriptive statistics were obtained to provide a profile of the examinees. Table 1 includes a description of the distribution of characteristics of the examinees and the mean of the COMP total score for the subgroups listed. Canonical correlation analysis was used to assess the multivariate relationship between a predictor set of variables including age, sex, race, degree type, program category based on major, and ACT assessment scores, and a dependent set that consisted of the 6 subtest scores of the COMP. The six subtest scores were: (1) Functioning within Social Institutions, (2) Using Science and Technology, (3) Understanding the Arts, (4) Communicating, (5) Solving Problems and (6) Clarifying Values.

Dummy coding was used for the degree and sex variables. Exact age at the time of testing was used in canonical and regression analyses. In order to use program/major as a predictor variable for the nine categories, criterion-scaled coding was utilized. The technique involved substituting the group mean on the COMP total score for each category as a proxy. Analyses of variance (ANOVA) and

TABLE 1

Characteristics of SSC 1982-1983 ACT-COMP Examinees

Variable	Category	Category Frequency	Mean on Comp Total Score
Academic Year	1982	297	168.1898
	1983	399	171.4411
Gender	Female	527	169.1803
	Male	169	172.6627
Type of Degree	Transfer	173	168.0231
	Career	523	170.6883
Age Group	19-below	8	na
	20-22	170	162.6294
	23-30	267	170.7228
	31-over	233	174.9742
	Missing	20	na
Ethnic Group	Black	372	163.8898
	Non-black	322	177.1863
	Missing	2	na
Program/Major	Business	148	167.1351
	Office Administration	33	158.1515
	Early Childhood Education	39	155.1795
	Consumer Studies	68	158.2794
	Nursing	230	181.1870
	Other Allied Health	60	171.1500
	Public Service	29	162.6897
	Liberal Arts/Gen. Sciences	50	170.6400
	General Education	39	163.4872

Total N = 696
Grand Mean = 170.0259

t-test analyses were used to determine if means were significantly different among subgroups for purposes of interpretation in the multivariate analyses. Multiple regression analyses were used as followup to the significant canonical analysis.

Multivariate analyses of variance (MANOVA) were used to compare group performance on the COMP. MANOVA analyses comparing group performance based on age, type of degree, sex, race and major were utilized with the 6 subtest scores as the dependent measures. Univariate analyses of variance were used as followup to significant MANOVAs.

RESULTS

Descriptive Statistics

The means on the COMP total were obtained for all subgroups and the followig means were found to be significanlty different at $p \leq .05$ based on t-test and ANOVA: (1) career students had a higher mean than transfer degree students when allied health majors were included as career; (2) transfer degree students had a higher mean when allied health students were not included as career; (3) males had a higher mean as a group than females; (4) white students had a higher group mean than the black student group mean; (5) older students (over 30) and (over 22) had a higher group means than younger students (under 23).

Canonical Correlation Analyses

Canonical analysis that included all nine program/major categories as predictors resulted in the extraction of two significant canonical variates. The structure coefficients ($\geq .30$) that loaded on the first variate reflected characteristics of examinees more successful on the COMP, i.e. white ethnic group, higher ACT assessment scores, and program/major category requiring admissions selection criteria. The second variate had loadings that reflected characteristics of less successful examinees: female, black ethnic group, younger, and enrolled in a career degree program. Structure coefficients on all the original variables, with the exception of gender, were statistically significant with $p \leq .05$. Table 2 presents the results of this analysis.

TABLE 2

Canonical Correlation Analysis of 1982-83 COMP Examinees

Eigenvalue	Canonical Correlation	No. of Eigenvalues	Chi-Square	df	p
.39907	.63172	1	385.41	36	<.0001*
.03573	.18904	2	45.97	25	.0065*

Original Variable	Canonical Variate 1	Canonical Variate 2	F	p
Sex	-.128	.373*	1.85	.0877
Race	.603*	-.511*	20.52	<.0001*
Age	.272	.511*	6.31	<.0001*
ACT	.931*	.097	59.53	<.0001*
Degree	.120	.416*	2.20	.0417*
Major	.798*	.228	38.42	<.0001*

*Statistically significant with $p \leq .05$

Canonical analysis utilizing only program/major categories with open admissions (nursing and other allied health programs excluded) also resulted in the extraction of two significant canonical variates. In this analysis, the characteristics of higher performing students were: male gender, white ethnic group, older age group, higher ACT assessment score, transfer degree category and liberal arts/general science major category. The characteristics of less successful performance indicated black ethnic group, lower ACT and a career-track degree program. The results are presented in Table 3.

TABLE 3

Canonical Correlation Analysis of 1982-83 COMP Examinees
Open Admissions Programs

Eigenvalue	Canonical Correlation	No. of Eigenvalues	Chi-Square	df	p
.26966	.51939	1	160.19	36	<.0001*
.05059	.22492	2	38.05	25	.0458*

Original Variable	Canonical Variate 1	Canonical Variate 2	F	p
Sex	-.538*	.128	5.66	<.0001*
Race	.374*	-.566*	4.17	.0004*
Age	.272	.136*	3.06	<.0061*
ACT	.833*	.417*	15.90	<.0001*
Degree	-.455*	.479*	4.80	.0001*
Major	.606*	.222	7.71	<.0001*

*Statistically significant with $p \leq .05$

Multivariate Analysis of Variance (MANOVA)

MANOVA by age category, less than 23, ages 24 through 29, and age 30 and over resulted in a significant Wilk's lambda of .88547 with an approximate F-value of 7.00817 and $p \leq .001$, indicating that there were significant differences by age category on the six subtests of the COMP. Older students as a group had higher performance than younger students.

MANOVA by race (black, nonblack) resulted in a significant Hotelling's T-Square of .1844, and an approximate F-value of 21.11457 which was significant with $p \leq .01$. Followup analyses indicate that the nonblack students had significantly higher performance on all subtests of the COMP Objective Test.

MANOVA by type of degree (transfer versus career) resulted in a significant Hotelling's T-square statistic of .92438, approximate F-value of 5.43975, $p \leq .01$, indicating that transfer students have higher performance than career degree students when nursing and allied health were excluded. However, there were no significant differences in performance between transfer and career degree students when the nursing and allied health students were included as career. MANOVAs by gender (Hotelling's T-square .01523, approximate F-value of 1.74897, p = 1.07) did not yield statistically significant results.

Multiple Regression Analyses

Stepwise multiple regression analysis with ACT assessment, age, race, gender, program/major, and degree type as predictors, and the COMP total score as the dependent variable was used as part of the followup procedure. All the predictor variables except gender were statistically significant predictors of the COMP total score accounting for about 40% of predicted variance. However, the ACT assessment was the strongest predictor, accounting for 35% of the variance. The remaining variables in order of magnitude were: race, age, program/major, and degree type. Table 4 presents the results of the regression analysis.

TABLE 4

Stepwise Multiple Regression Analysis
1982-1983 COMP Examinees

Step No.	Variable	R	RSQ	Increase in RSQ	F-to-Enter
1	ACT	.5885	.3463	.3463	355.9863
2	Race	.6061	.3673	.0210	22.2765
3	Age	.6168	.3805	.0132	14.2541
4	Major	.6240	.3894	.0089	9.7764
5	Degree	.6829	.3955	.0061	6.7407

CONCLUSIONS

The results indicate that older students, white ethnic group students, and transfer degree students at SSCC have higher performance on the COMP measure than their counterparts with the exception of nursing and allied health students. These findings suggest that examinees in the transfer programs at the college have higher performance as measured by the COMP in general education skills and knowledge than do the career-track students when career students in programs with selective admissions criteria (i.e. Allied Health programs) are removed from the analysis. Students at higher risk of lower performance were younger black students (particularly female), who were enrolled on an open admissions basis in a career-track degree program.

The ACT assessment score was the most important predictor of success on the COMP total score, indicating that academic aptitude is highly related to performance of these students. Race and age of these community college students were also important predictors of successful performance. While the findings from this study are not surprising it serves to substantiate expected outcomes. It identified more successful and less successful performance by urban community college student groups on the COMP measure. Instructional strategies or other educational interventions may be developed to increase the general educational skills of the groups predicted to be at greater risk of low performance.

In lieu of the very limited amount of published research on community college student performance on the ACT-COMP objective test, this research provided documentation for predicting subgroups at greater risk of less successful performance in the assessment of general education skills. Further research is planned for subsequent academic years and will include a focus on gain scores of the students, i.e. gains based on estimated entering scores and exiting performance on the COMP Objective Test.

REFERENCES

COMP Prospectus - 1983-84, (1983) American College Testing Program.

Farver, A.S., Sedlacek, W.E., and Brooks, G.C. (1975) Longitudinal predictions of university grades for blacks and whites. Measurement of Evaluation in Guidance, 7, 243-250.

Ward, E.F. and Pringle, R.A. (1984, Spring) Measuring the quality of non-traditional graduates: An evaluation of the ACT College Outcomes Measurement Project Objective Test. The North Central Association Quarterly, 58(4), 367-376.

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

LITERATURE FOR RESEARCHERS

Darrel Clowes, Editor

(Editor's Note - This article provides a good bibliographic source for researchers who would like to expand their horizons and look to the future for a new perspective in operational thinking.)

The "Well-Futured" College: Reaching For Tomorrow - Today

by

Harold G. McMullen

Educational organizations throughout the country are struggling to overcome the effect of a "now-oriented" atmosphere that has held most schools and colleges spellbound for over two decades. However, the exaggerated present-centered limits on education may be melting away under the heat of penetrating critiques that score this short sightedness as a national disability. The prevailing impact may be the arousal of a national expectancy of educational re-direction.

It is timely that any emerging educational focus be directed toward anticipating alternative futures. This needed futures-orientation will allow for a polyfocal perspective on education that is lacking under the constricted "past-present" only approach that has been dominant for a quarter century. The advocacy of a polyfocal perspective in educational thinking and operations is beginning to evolve as a basis for guiding institutional education into the 21st century and beyond.

One vital factor in re-shaping educational direction is a growing recognition that the clientele of the schools and colleges will be a 21st century population. The remaining influence of the 20th century is short-lived, at best. Student interests are not well-served by an educational system that is stuck in a "futures-blind" program dictated by "bottom line" fiscal expediency leading to the obsolescence and decline of the United States as a world leader.

One of the most obvious manifestations of the need for a futures focus may be observed among the nation's colleges. It is revealed in the mounting frequency of college workshops, conference themes, and literature devoted to a widening range of "crises" in higher education. Escalating crisis management is symptomatic of a "future shock" environment challenging decision-makers at every level. These conditions pointedly call for a fundamental redirection of the perspectives guiding college operational thinking in the transitional era moving towards the 21st century.

The leading assumption of this essay is that the application of selected perspectives and procedures drawn from the field of futurism offers a powerful means of renewal for the educational enterprise. Sporadic and occasional futuristic ventures have been advocated and described in education since before the 1960's. An increased level of futuristic applications on some campuses evolved during the decade of the 1970's. But, it remains for the present period to construct a more challenging environment for managing educational futures motivated by heightened concerns over the adequacy of educational preparedness as a national strength. The nations' community colleges appear especially well positioned to assume this aspect of leadership in American education before the turn of the century.

But what is a futures-oriented college? The futures-oriented college begins with an initial (futuring) stage and may work through intermediate (futured) and advanced (well-futured) periods of institutional renewal. The attainment of these developmental levels is deliberate and purposeful rather than random and aimless. A "well-futured" college is defined as an institution of higher education that has attained full commitment and maturity in making effective application of futuristic procedures as a means of institutional renewal. Futurism is a means of directing the college's operational development by strengthening its capacity to realize its mission.

Conceptualizing a "well-futured" college entails nothing less than approximating a model which pervades the mainstream of organizational dynamics: (1) the curricular and instructional program, (2) lifelong human resource development for students and staff, (3) and the college's organizational development system, including institutional research, planning, and marketing functions. These components, taken together, constitute a potential structure through which futures techniques may be selectively applied. Future methods are selected when appropriate to the context of each college engaged in creating its long-term future.

It is in developing the pervasive atmosphere of a "well-futured" college that the challenge of national education leadership and preparedness for the 21st century may be realized. Achievement is varied and difficult to estimate. Some educational futurists have speculated that futures studies courses, including conventional courses that have added interdisciplinary course units involving futures themes, may already number several thousand at the undergraduate level. Additionally, at least a half-dozen or so colleges include futures studies majors at the graduate level. These are now well distributed geographically. Centers include the Universities of Houston, Hawaii, Minnesota and Massachusetts at Amherst.

Futuristic coursework and training workshops designed for educators are creating a new role in education; the educational futurist. Emergence of the educational futurist in the waning years

of the 20th century promises to overcome a historical limitation in the background and focus of contributors to the educational futures field.

Figure 1.

Time Line On Background Specialties
of Contributors to Educational Futurism

Early Period	Contemporary Period	Emergent Period
1. Futurists on Education 1950s	2. Educators on Futurism 1970s	3. The Educational Futurist 1980s-90s

The simplified time line illustrated in Figure 1 suggests a three step progression for those who are beginning to specialize in the theoretical and practical direction of educational futures. The ideal "educational futurist" combines the best background features of both predecessor types. Educational futurist networks, such as the Future Trends Commission of the AACJC's National Council for Staff, Program, & Organizational Development (NCSPOD), are now in a position to provide technical assistance to colleges making an effort to become futures-oriented. Technical assistance from the futurist community to colleges at the initial, intermediate, or advanced stages is now readily available.

College futurists have been frequently mentioned in the literature by technical resource groups since the beginning of the 1980's. Constructing an inventory of available resources, including internal resources already available within the institution, is essential for the ongoing support systems of the three main college components: (1) staff development programs, (2) academic and student development programs, and (3) the institution's organizational development system. It is likely that some degree of campus activity with a futures orientation is already underway in each sector at most colleges. Coursework with futuristic themes, such as life career development services, consciousness raising "megatrends" seminars for staff and the general public, and institutional uses of futures research techniques, strategic planning and marketing approaches are more in evidence in the college setting of today. Hence, many colleges are already functioning at the initial "futuring" level.

The early "futuring" initiatives, however, are seldom perceived as an institutional effort yielding long-term results of high priority. Typically early "futuring" innovations are most often regarded as trendy minor enhancements to the conventional college operation. The more comprehensive potential of institutional futures development is yet to be realized on most campuses. A more coordinated approach is now needed if colleges expect to move beyond the crisis management setting and hit-or-miss "futuring" activities. Moving beyond the initial institutional stage will require a deeper level of commitment than is prevalent today.

A persistent article of popular wisdom in America is a public expectation that the schools and colleges prepare their graduates for "the future." Calling upon images of "the future" is a favorite rhetorical device of the academically mediocre, or worse yet, obsolete. Nevertheless, most educational organizations appear unable to maintain a balance between their past-present-future perspectives. One recent study, described later in this paper, has convincingly reported on the significance of differential time perspectives held by college leaders and the direction taken by the college.

Theoretically, it is the attainment of balanced and reciprocal time perspectives within a polyfocal "past-present-future" conspectus that is the underpinning of the "well-futured" college. Within the context of each institution's circumstances, role players influencing the operation of the organization seek to provide practical applications that will create the futures balance ordinarily missing in colleges exhibiting exaggerated "past-present" time orientations that are conventionally off balance.

Community colleges, in particular, offer the most promising potential for advanced futures practices prior to the turn of the century if they can seize the initiatives available. Their special histories and relative value systems provide the nation with a readymade network capable of helping their students meet the demands of the 21st century. For most community colleges, a futuristic focus is a timely renewal strategy for both the college and its constituent communities.

The special potential of American community colleges for serving their constituencies as centers for creative futures preparedness now needs to be carefully considered for an unprecedented new mission. But, the futures prospect should receive wide review and consensus both within the college and among its significant constituencies before institutional commitments are made. Assuming that many colleges are already operating at the initial "futuring" stage, however inadvertently, it is probable that consensual commitments among internal and external constituent groups are available as a pre-disposition. This may lead to the coordinated direction necessary to enter the more committed intermediate "futured" stage. This is a next step on the way to "well-futured" colleges that may be seen as flagship institutions by the turn of the century.

Advocacy for community colleges to extend their mission to become Centers for Community Futures has only recently made an articulate appearance in the literature on educational futurism. It is a central purpose of this essay to contribute to an advancement of this advocacy as a creative means of enhancing college and community renewal relationships.

America's community colleges, like most organizations, are experiencing unprecedented needs to overcome the impact of "future shock" at all levels. Popular transitional literature including the "Third Wave" and "Megatrends" reflects the pervasive recognition of these needs within the larger society.

Before reviewing selectively the recent literature on education futuring in the college setting it is useful to consult briefly some foundational underpinnings of American futurism expressed in Alvin Toffler's Future Shock (1970):

> *Every society faces not merely a succession of probable futures, but an array of possible futures, and a conflict over preferable futures. The management of change is the effort to convert certain possibles into probables, in pursuit of agreed-on preferables. Determining the probable calls for a science of futurism. Delineating the possible calls for an art of futurism. Defining the preferable calls for a politics of futurism.*
>
> *Corporations must not remain the only agencies with access to such services. Local government, schools, voluntary associations and others also need to examine their potential futures imaginatively. One way to help them do so would be to establish in each community "imaginatic centers" devoted to technically assisted brain-storming. These would be places where people noted for creative imagination, rather than technical expertise, are brought together to examine present crises, to anticipate future crises, and to speculate freely, even playfully about possible futures. (P. 460)*
>
> *. . . In any such effort, the overwhelming majority of ideas put forward will, of course, be absurd, funny, or technically impossible. Yet the essence of creativity is a willingness to play the fool, to toy with the absurd, only later submitting the stream of ideas to harsh critical judgment. The application of the imagination to the future thus requires an environment in which it is safe to err, in which novel juxtapositions of ideas can be freely expressed before being critically sifted. We need sanctuaries for social imagination. (Pp. 463-464)*

The bibliographic portion of this essay identifies selected references that have become available within the past half-decade and briefly examines their usefulness for community college renewal. It is stipulated here, however, that no exhaustive review of the literature on futuring in a college setting is claimed as a prerequisite to examining selected resources.

As has been stated previously, one assumption of the present essay is that community colleges are particularly well positioned by mission and character to assist their constituent populations to anticipate effectively future trends. The "well-futured" college is conceptualized as having a fully designed and implemented program of futures-oriented educational services enabling that college's staff, students, and the general public to anticipate effectively future trends and choose alternative futures. College futures programming is necessarily dynamic, developmental and holistic in perspective and scope. It is likely that most colleges could attain well-futured levels of implementation by the turn of the century, or sooner. Fundamentally, a morphological analysis as shown in Figure 2 serves to illustrate a dynamic relationship between the main-stream components and developmental stages leading to a "well-futured" college.

Figure 2.

Developmental Flow of the Well-Futured College

College Component	Developmental Stages		
	Initial "Futuring"	Intermediate "Futured"	Advanced "Well-Futured"
Staff Development	• Megatrends Seminars • Futurist Speakers & Technologies Demonstration • College Futures Roundtables	• Futuristics Skill Building & Technologies • Community Future Trends Roundtable • College Futures Council	• Experimental Futuristic Technologies • College Staff Futures Center • Educational Futures Networking Center
Program (Curricular & Student Development)	• Futuristic Units within regular courses • Conventional Counseling with Futures perspectives • Applied New Technologies Installation (Phase I)	• Future Studies Courses installed • Life Career Planning System • Applied New Technologies Center (Phase II)	• Future Studies Program in Curriculum • Human Resource Development Center • Applied & Experimental Technologies Center (Phase III)
Organizational Development	• Install Environmental Scanning • Trends Extrapolation & Basic Futures Methods • Futuristics Demonstrations (Short-Term)	• Community Futures Study Report • Strategic Planning in Master Plan • Forecasting & Scenarios (Long-Term)	• Community Futures Center • Appoint Professional Futurists & Research Staff • Planned College Futures System (Continuing Cycle)

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Components noted in Figure 2 are illustrative of how a college may evolve as a "well-futured" institution. The components are not considered fixed. They are used simply to convey the impression of some dynamic flow or movement toward more pervasive futures techniques and institutional commitment to selective adaptations of futuristic practices in the college setting. Many colleges are believed to be currently functioning at the initial, or "futuring" stage. Few, if any, institutions are presently believed to have evolved to the "well-futured" status. Probably less than ten percent of the nations' community colleges have plans on the drawing board, although the level of awareness and institutional symptoms of the need for well-futured colleges are accelerating. Most colleges are in the initial stage without a clear plan to evolve much further. The various techniques and methodologies of futurism such as environmental scanning, trends extrapolation, forecasting, cross-impact analysis, and scenario development are well described in the literature.

One simple model for identifying literature on the well-futured college is available by adopting the Staff, Program and Organizational Development (SPOD) plan. Combining these three foci into an integrated whole represents an appropriate initial standard for fundamental classification. Until very recently the most prominent books describing and prescribing college-based futuring practices have not been devoted to the complete "SPOD" spectrum. A large number of books have centered on the "Organizational Development" field with detailed prescriptions describing strategic planning and futures research methodologies adapted to the college context. The New Directions For Institutional Research series includes Norman P. Uhl's "Using Research For Strategic Planning" (March 1983) and Morrison, Renfro and Bocher's "Applying Methods and Techniques of Futures Research" (September 1983). The two, taken together, are representative of current theory and practical attempts to bring futures research procedures into play as a major means of enhancing institutional planning systems for colleges. They are essential references for both beginning and experienced practitioners of college futuring.

College program development, including curriculum and student development components, is under-represented in books on educational futuring. Student development services is supported by Frederick R. Brodzinski (Ed.) Utilizing Futures Research (1979), a volume in the New Directions For Student Services series. This excellent volume also includes a bonus chapter on futuring as a tool for staff development.

The broad field of curriculum futures development is sparse on college program development and teaching references for undergraduate future studies. Many of the better books were produced during the late 1970s. The classic curriculum references are: Harold G. Shane's The Educational Significance of the Future (1973) and Educating For A New Millenium (1981). These paperbacks are published by the Phi

Delta Kappa Educational Foundation at Bloomington, Indiana. However, both devote limited attention to post-secondary education. The community college world is still without a book-length reference aimed exclusively at educational futuring, futures-oriented curriculum development, and future studies instruction in the two year college.

Despite these limitations, there are several references from the educational futurist literature that serve to fill the void. These include Draper L. Kaufman's mid-70s classic on Teaching The Future (1976:ETC Publications, Palm Springs, California); a publication of the World Future Society: Education and the Future (1980), edited by Lane Jennings and Sally Cornish; and, Kaufman's more recent Futurism and Future Studies (1980) published by the National Education Association. A National Council For The Social Studies publication: Futures Unlimited: Teaching About Worlds To Come (1979), edited by Robert M. Fitch and Cordell M. Svengalis of the University of Iowa, complements a selected collection for assisting college instructional programs to become futures-oriented. These four books are a quality collection of staff development aids that can provide foundations for the well-futured college's instructional plans and practices, including course units and techniques for instructors.

During 1984 the appearance of a collection of readings produced for community college practitioners significantly overcame much of the futures reference lag confronting the two-year colleges. A project of NCSPOD's Future Trends Commission led to the excellent paperback edited by Richard J. Brass entitled Community Colleges, The Future, and SPOD is now available from New Forums Press, Inc. of Stillwater, Oklahoma. The range of topics and authors (15 in all) make this volume an indispensable contribution to the literature. The work should serve as a basis for staff development and institutional renewal in the community college. Neal A. Norris' chapter on "The Community College as a Future-Oriented Community Learning System" is a provocative starting place for community college futuring perspectives.

The foregoing review has been limited to selected books believed to provide support for developing a well-futured college. Generally, the journal articles and "fugitive" literature suffer from the limitations of institutional parochialism and the exaggerations of the "brag article" set. In spite of this acknowledged bias, three recent articles are of significance: Ringle and Savikas' "Administrative Leadership: Planning and Time Perspective," in the Journal of Higher Education (1983) offers a rare summary of empirical studies on the influence of the college leader's time devoted to institutional futures. A recent issue of The Futurist (August, 1984) includes an excellent article on career projection systems in David Borchard's "New Choices: Career Planning in a Changing World;" a typology for lifestyle futures is described in Arnold Mitchell's article "Nine American Lifestyles: Values and Societal Changes;" and, a special section consisting of five articles on creativity.

Finally, an additional bibliography published in the ASCD's special issue, "Preparing for the Future," in Educational Leadership (September, 1983) is Don Glines' "Resources on the Future." This article provides a generous sampling of available resources for futures-minded educational leaders. The World Future Society and its publications add measurably to the stock of resources and services available. Their bi-monthly journal, The Futurist, is an indispensable guide to the professional futures community and its concerns.

One speculation is in order regarding the optimistic prospect that community colleges could become creative Community Futures Centers for the 21st century. It is likely that many of the two-year community colleges reaching "well-futured" maturity will need to become full-service baccalaureate institutions by the turn of the century! Furthermore, the requirements of local economic development programs, depending upon access to advanced college programs and services, can be expected to stimulate the emergence of the 21st century community college as a lifelong learning institution which goes well beyond the two-year limitations of its 20th century origins.

Plausible combinations of conventional and innovative college programming and delivery systems spawned during the twilight years of our present century suggest a rich variety of community college futures scenarios awaiting developmental leadership. Well-futured community colleges will tend to fulfill their expectations as they become bold in conception and in deed.

This essay has provided a conceptualization of the institutional potential of American undergraduate colleges, especially community colleges, as a means of providing creative preparedness for anticipating and choosing among alternative personal and societal futures into the 21st century. A balanced time perspective which includes the future is believed to offer a more useful model for college direction and renewal than the present and past. A futuristic perspective, when consensual, could commit the colleges to a new emphasis upon applied futuring processes that pervade and enliven the institution and its community constituencies.

A continum indicating that many colleges are already operating, however inadvertently, with a futures-oriented spectrum would place most institutions somewhere within the initial "futuring" stage. Institutional progress toward the potential intermediate "futured" and advanced "well-futured" stages is advocated as a promising approach to institutional renewal while expanding the college service mission beyond the timid limitations of 20th century past-present expediency. Finally, it is speculated that the "well-futured" community colleges of the late 20th century will enter the 21st century renewed and therefore capable of operating as creative Community Futures Centers forming a national educational resource network that is sorely needed as American education reaches for tomorrow - today.

ADDITIONAL REFERENCES

The following selected references are suggested in addition to those included in the essay. They are available through the publishers or may be ordered from the World Future Society, 4916 St. Elmo Avenue, Bethesda, MD.

Botkin, James (et al.) Global Stakes: The future of high technology in America, Ballinger Publishing Co., 1982.

Cetron, Marvin and O'Tool, Thomas. Encounters with the future: A forecast of life into the 21st century, McGraw-Hill, 1982.

Christian, James L. Philosophy - An introduction to the art of wondering, (Third Edition), Holt, Rinehart and Winston, 1981.

Cornish, Edward. The study of the future, World Future Society, 1977.

Feingold, S. Norman and Miller, Norma Reno. Emerging careers: New occupations for the year 2000 and beyond, Garrett Park Press, 1983.

Fowles, Jib. Handbook of futures research, Greenwood Press, 1978.

Helmer, Olaf. Looking forward: A guide to futures research, Sage, 1983

Kurtzman, Joel A. Futurecasting: Charting a way to your future, ETC Publications, 1984.

Lippitt, Gordon L. Organization renewal: A holistic approach to organizational development, (Second Edition), Prentice-Hall, 1982.

Mitchell, Arnold. The Nine American Lifestyles: Who we are and where we are going, Warner Books, 1984.

Whaley, Charles E. Futures studies: Personal and global possibilities, Trillium Press, 1984.

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COMMUNITY COLLEGE JOURNAL FOR RESEARCH AND PLANNING

RESEARCH IN THE FIELD

Contained in this section are abstracts of articles which have been submitted either to the JOURNAL or to the ERIC Clearinghouse on topics of a general research nature which may be of value to many researchers. The name and address of the author is included for those who would like to obtain a copy of the complete article. We hope that you will find in this section, something that you can use in your research activities.

Abstracts by: Beverly Horne
Jefferson Community College
Louisville, KY 40201

A COMPARISON OF THE EFFECTS OF SUPERLEARNING TECHNIQUES ON THE LEARNING OF ENGLISH AS A SECOND LANGUAGE

A Study Conducted by Pueblo Community College in Cooperation with the International Education Management Corporation, P. Anthony Zeiss, President, Pueblo Community College, Pueblo, CO 81004

This study used techniques from the book Superlearning by Ostrander and Schroeder to determine possible effects on vocabulary retention rates of Saudi Arabian students studying English as a second language. Two groups of seven students each attended classes daily for three weeks. The treatment group, Group I, was trained in relaxation skills prior to the beginning of the study and consciously applied the techniques for the duration of the project. During the second week, they listened to classical music during classes, and in the third week, they were exposed by the teacher to special rhmythic phrasing. The control group received only the standard course of instruction. Student achievement was measured by the results of a vocabulary test given weekly. A T-test for independent groups with twelve degrees of freedom was performed with the means of two groups for the pre-test and each of the three weekly tests. An analysis of the data revealed no significant group differences on the first three tests. Group I, however, did achieve a significantly greater post-test mean score than did Group II. The difference, however, was slight and it should be noted that a ceiling effect was realized where all seven students in the treatment group achieved scores of 100 out of a total possible score of 100. The authors concluded that it was unlikely that the superlearning techniques were the sole cause of the significance and recommended that further research be conducted in this area.

HUMANITIES AND LIBERAL ARTS: A COMPARISON

Florence B. Brawer, Center for the Study of Community Colleges, ERIC Clearinghouse for Junior College, 8118 Math-Science Building, Los Angeles, CA 90024

What are the experiences and aspirations of people teaching the humanities and other liberal arts courses in community colleges nationwide? This paper addresses the question by comparing two cohorts on instructors who responded to an extensive survey administered in Spring 1983. The nationwide sample of 1870 included 1467 instructors teaching courses only in the humanities and 403 instructors teaching humanities and other liberal arts courses. Among the findings: (1) using organizational affiliation as a measure, the humanities group was more professionally oriented than the smaller liberal arts sample; (2) the humanities group was more likely to have obtained grants and to have engaged in developmental activities pertaining to their teaching; (3) though 30% of respondents thought that more media or instructional materials would make their course better, results showed a less than enthusiastic use of available assistance; and (4) overall, both groups indicated satisfaction with their educational careers. A number of groups profiles are provided that may help administrators and faculty members to make informed decisions and to understand some of the issues surrounding the role of academic instructors today in community colleges nationwide.

The author of the following three articles is Boris Blai, Fallen Oak, Middleton Road, Gradyville, PA 19039

EXPECTANCY TABLES: A COUNSELING DEVICE FOR ACADEMIC PERFORMANCE PREDICTION

This paper describes an academic expectancy table developed for use at Harcum Junior College in Bryn Mawr, Pennsylvania. The table compares orientation test scores and subsequent grades earned in a particular class, in this case, an Introduction to Education course. The author provides step-by-step instructions for constructing such tables and recommends that they be routinely used to facilitate important career and educational decisions.

PREDICTING JOB SATISFACTION

Psychological needs of individuals are compared to established needs/satisfaction patterns identified with different kinds of occupations. A questionnaire was devised to measure strength

differences between groups and administered to 472 federal government workers employed in 29 different kinds of jobs. Results are presented and categorized by five occupational types. Data-based occupational profiles of psychological needs could provide great assistance to community and junior college students seeking realistic career choices.

WHICH TECHNIQUE IS BETTER?

An adaptation of the median test is presented as a non-complex method for determining the reliability of measure group comparisons. Included is a ten-step diagram and the tables needed to determine statistically significant differences between groups.

FROM THE ERIC CLEARINGHOUSE

FEASIBILITY STUDY FOR THE ESTABLISHMENT OF A HUMAN SERVICES PROGRAM

Marlene Eisen and John A. Lucas

A study was conducted at William Rainey Harper College (WRHC) to determine the feasibilty of establishing a new human services program at the college by assessing the employment opportunities for graduates of the proposed program and the educational needs of persons already employed in the human services field. In 1981, questionnaires were mailed to 113 local community service organizations, including youth service, residential care, and family service organizations. A year later, 25 of the non-responding organizations were sent a shorter survey. Study findings, based on 27 responses to the 1981 survey and 14 responses to the 1982 survey, 5 letters of support, and a meeting with respresentatives from 8 human service agencies, included the following: (1) employment demands and the educational needs of persons currently employed in the field could support an enrollment of 18 full-time and 58 part-time students per semester in the proposed program; (2) opportunities for observation and internship sites were offered by 16 organizations which could provide up to 40 internships per semester; (3) 15 of the responding organizations were interested in a continuing professional development program for their staff members; and (4) respondents expressed an interest in becoming involved in the process of curriculum development. The bulk of the report consists of data tables detailing results. The questionnaire is appended.

An ERIC Report

EVALUATING COLLEGE ASSESSMENT AND PLACEMENT PROGRAMS

Jim Palmer

As mandatory assessment and placement of entering students become more common, many researchers are examining the efficacy of the procedures and instruments used to identify students with skill deficiences. The following citations and abstracts represent a selection of the latest ERIC documents that detail the methodology and findings of such research efforts. Full copies of the documents can be obtained on microfiche at over 650 libraries across the country or ordered (for the cost of reproduction and mailing) from the ERIC Document Reproduction Service (EDRS) in Alexandria, Virginia. For an EDRS order form and/or a list of the libraries in your state that have ERIC microfiche collections, please contact the ERIC Clearinghouse for Junior Colleges, 8118 Math-Sciences Building, UCLA, Los Angeles, California 90024.

Boggs, G.R. The Effect of Basic Skills Assessment on Student Achievement and Persistence at Butte College: A Research Report. Oroville, CA: Butte College, 1984. 23 pp. (ED 244 686).

A study was conducted at Butte College to determine the effectiveness of the college's assessment and placement program. Between January 1981 and summer 1982, the Nelson-Denny Reading Test and a writing sample were used in placement; while after summer 1982, the Stanford Task Tests of English and Reading Abilities were used. The primary file of data collected for the study contained information on all 3,497 students who had taken freshman composition (Eng 210) between winter 1979 and fall 1983, while the secondary file contained information on all 191 developmental English (Eng 102) classes taught from fall 1975 through summer 1983. Statistical analyses of variance revealed: (1) student achievement had significantly increased since the college instituted its basic literacy skills assessment program in January 1981; (2) assessment by writing sample seemed to be particularly effective in increasing student achievement in freshman composition and least effective in increasing achievement in developmental writing; (3) the Stanford Task instruments seemed more effective in increasing achievement in developmental writing than in freshman composition; (4) basic skills abilities, as measured by high school grade point averages (GPA's),

of students entering the college before and after assessment began were not significantly different; however, college GPA's increased signficantly under both assessment programs.

Cordrey, L.J. Evaluation of the Skills Prerequisite System at Fullerton College (A Two Year FollowUp). Fullerton, CA: Fullerton College, 1984. 99 pp. (ED 244 663).

Beginning in 1978, Fullerton College implemented a mandatory assessment/placement program designed to assess student skills, ameliorate skill deficiencies through basic instruction, and place students in classes appropriate to their level of competency. A study was conducted to determine the impact of the skills prerequisite system on the progress and performance of students. The study examined placement patterns, dropout rates, effects of remediation on subsequent grade point average (GPA) and academic persistence, differences attributable to age and sex, frequency of misplacement, and the relationship of reading levels and math scores. Two research samples were selected from the population of 8,250 students tested in 1982-83 by means of a cluster sampling: a group of 658 students tested in preparation for fall 1982 enrollment and a group of 419 students who successfully enrolled in specific remedial courses in reading, writing, and mathematics. Study findings included the following: (1) test scores showed that 85% of the students needed remediation in writing, 69% in reading, 48% in computation, and 67% in algebra; (2) students who did not enroll in remedial courses during their first semester rarely did so during their second; and (3) misplacement rates were 9.3% in writing, 6.2% in reading, 1% in computation, and 33.4% in algebra. The bulk of the study report consists of data tables detailing scores, grades, and other findings.

Haase, M.H., and Caffrey, P. The Impact of a Coordinated Assessment/Advisement/Placement Process on Student Success and Retention. Statistical Response to a Grant Proposal. Sacramento, CA: Sacramento City College, 1984. 27 pp. (ED 243 540).

The assessment/advisement/placement process utilized at Sacremento City College (SCC) includes a waiver system designed to meet the needs of those students who have demonstrated proficiency by means other than the usual assessment process. In fall 1983, 506 students were permitted to enroll in a variety of classes on the basis of having taken a prerequisite course in high school, at SCC, at another Los Rios Community College District college, or at an out-of-district college; having an American College Testing Program (ACT) score above 21; having a Scholastic Achievement Test (SAT)

score above 500; having a Test of English as a Foreign Language Text (TOEFL) score above 375; or possessing a college degree. A study conducted to determine the academic success rates of these students revealed: (1) 38.1% of the students received an A, B, C, or credit grade in the course, while 9.3% received a D, F, or no credit grade; (2) success rates ranged from 44% to 66% based on the type of waiver received, with students who had high TOEFL scores having the highest level of success; and (3) students who availed themselves of the established assessment/advisement/placement process had success rates ranging from 61% to 77%. The study report includes tables indicating grades by course for all waiver students and by type of waiver. The research proposal is appended.

Hartman, N.E. Maximizing the Effectiveness of Reading Tests in the Community College. St. Louis, MO: St. Louis Community College, 1981. 55 pp. (ED 237 121).

A study was conducted at St. Louis Community College to validate the Nelson-Denny Reading Test (NDRT), Form C, as an instrument for student placement, to empirically establish a cut-off score for a mandatory reading improvement program, and to provide more complete and meaningful feedback to students about their reading test results. The study sample was composed of day students with less than one semester's college credit and with work plus study load not exceeding 72 hours per week. The initial sample of 500 students tested was reduced to 186 as a result of the imposition of various controls. Results of a three-phase analysis of NDRT scores and course grades included the following: (1) the mean vocabulary, comprehension, and total NDRT scores of the sample fell into 31st, 32nd, and 28th percentiles, respectively, according to national norms; (2) the mean grade of the sample, adjusted for withdrawals, was 2.130; (3) reading skill level accounted for almost one-third of academic achievement variance; (4) 74% of those who score above 49 on the NDRT passed, 28% who scored above 49 failed, and 29% who scored below 49 passed; and (5) with a 49 on the NDRT as a cutoff, 34% of the incoming students would qualify for reading improvement courses. A final phase of the study involved generating feedback data, including national and local percentiles and a predicted GPA (grade point average), for use in counseling and advisement.

Hector, J.H. Establishing Cutoff Scores for Placement in Community College Developmental Courses. Morristown, TN: Walters State Community College, 1984. 20 pp. (ED 246 934).

To determine the effectiveness of placement test scores in predicting final course grades, students enrolled in selected college-level courses at Walters State Community College in Tennessee

were tested during winter 1983. At the end of the quarter, course grades were collected, and correlations between test scores and course grades were calculated. Cut-off scores were determined to minimize the number of false positives (i.e., predicting failure when success would have occurred) and misses (i.e., predicting success when failure would result). Concerns about the distribution of headcount in college-level and developmental courses were also considerations in setting cut-off scores. In order to increase student and faculty acceptance of the use of test scores for placement purposes, a revised screening procedure was implemented for new student orientation and fall registration in 1983. A three-level system of cut-off scores was developed. Students below the STOP level were advised that they had little chance of success in courses related to the skills measured by the test; students with scores in the CAUTION level were advised to look at their high school performance and other factors before deciding on course selection; and students above the GO level seemed to have the skills needed to succeed. The revised screening procedure significantly increased developmental enrollments, and an analysis of the performance of students at various levels validated the cutoff scores. Screening materials and study data are appended.

Rasor, R. A., and Powell, T. Predicting English Writing Course Success with the Vocabulary and Usage Subtest of the Descriptive Tests of Language Skills of the College Board. Sacramento, CA: American River College, 1984. 34 pp. (ED 243 535).

Since fall 1983, each student intending to enroll in an English course at American River College (ARC) has been required to take a placement test consisting of the vocabulary and usage subtests of the Descriptive Tests of Language Skills of the College Board. A study was conducted to establish the predictive capacity of the test by correlating course grades with test results. Correlation values were determined only for grades A to D, as experience indicated that F grades were frequently undistinguishable from W (withdrawal) grades and neither grade was given primarily to low-ability students. Due to a lack of normative data for the test, it was not possible to compare ARC results with other norms. The study found no correlation between grades and test scores for three of four English courses. Based on study findings, the following recommendations were made: (1) locate or develop a criterion-based test using a writing sample to place students; (2) if this is not possible, eliminate the vocabulary test and include the sentence structure subtest; (3) establish reasonably common criteria for grading; (4) continue the policy of using placement test scores only for guidance purposes until validity has been established; and (5) have assessment test results and grades in a centralized computer.

Rounds, J.C. Assessment, Placement, Competency: Four Successful Community College Programs. Marysville, CA: Yuba College, 1984. 41 pp. (ED 241 080).

Respondents to a 1982-83 survey of assessment practices in California's community colleges identified Sacramento City College (SCC), Fullerton College (FC), Sierra College (SC), and Victor Valley College (VVC) as having the most effective assessment/placement programs in the state. Interviews conducted on-site with at least three staff members involved in program administration, operation, or design at each campus gathered information on program development and testing policies; registration and assessment procedures; reactions to the program from counselors, students, and faculty; components leading to statewide recognition; and future directions. The interviews revealed that, although there were many differences among the institutions and among their programs, there were a number of similarities, including the following: (1) all of the colleges assessed a high percentage of entering students; (2) all relied heavily upon the computer, using it to provide a perscriptive printout for students within hours of assessment; (3) all but VCC required specific scores for entering English and language arts courses; (4) all but SC used a standardized assessment instrument; (5) administrative leadership and faculty involvement were important in all colleges; and (6) all schools but SC operated a testing office with opportunity for ongoing assessment. The study report includes profiles of each school's assessment program, summary findings, and appendices showing innovations.

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The editors offer the following suggestions to potential contributors:

Style

1. Follow the APA Style Guide.
2. Provide appropriate charts and illustrations.
3. Use a clear direct writing style.
4. Use current research material.
5. Include bibliographic references, if appropriate.

Types of Articles

1. Application or discussion of research and planning methodologies.
2. Articles on interest to planners, researchers and policy makers.
3. Creative approaches to research and planning problems.
4. Point-Counter Point approaches.
5. Issue Oriented articles.
6. Application of research and/or planning tools.
7. Trends and controversies in planning and/or research.
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